

American

FORESTS

JUNE 1954

50 CENTS



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Volume 60

No. 6

June, 1954

American FORESTS

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COVER • *Control of water today is regarded as the principle key in the conservation salvation of our country. Representative Clifford Hope, co-author with Senator George D. Aiken of the permanent small-watershed protection bill, said it this way: "The key not only to sound resource conservation but to our future progress as a nation will, to a considerable extent, lie in our success or failure with water, that is, in the way we handle, conserve, utilize and control it." (Cover by Fisher Associates)*

THE AFA

The American Forestry Association, publishers of **AMERICAN FORESTS**, is a national organization—*independent and non-political in character*—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and their part in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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Letters

Conservation Caravan

EDITOR:

We always enjoy receiving **AMERICAN FORESTS** but the issues of March and April were of special interest, partly due to the plans for the convention at Portland, Oregon, September 6-9. I have been to the Coast on three different occasions and the Conservation Caravan sounds wonderful. I plan to be at your meeting. However, we note from the Caravan schedule that the trip from Portland to Oakland is by bus in one day. This would be a long, tiresome trip and passengers would miss much of interest. . . .

J. H. Dickerson
Mining Engineer
Huntington, West Virginia

EDITOR:

I will plan to be at your Portland meeting. At this moment, it seems I should fly to meet the Conservation Caravan at some point, probably Chicago. Mrs. Johnson and I moved down here last March. We plan to build a new home on a ridge in the foot of the Ozarks. A year ago, I fenced in our 200 acres of land and planted 5000 seedling pines. A very dry summer and fall left me with 1500-1800 living. This winter I set out 10,000 and to date have very little loss to report.

Rodney K. Johnson, M.D.
Conway, Arkansas

(Editor's Note—As of May 7, Readers Dickerson and Johnson were two of 250 eastern AFA members who had announced their interest in attending the Portland meeting. However, Mr. Dickerson must have misread the itinerary in reference to the trip from Portland to Oakland. This trip will be made on the Conservation Caravan but the party will take to buses to visit Muir Woods and other points of interest in the San Francisco-Oakland area.)

Intercepted Letter

Mr. Arthur H. Folger
Healdsburg, California
Dear Mr. Folger:

The letters-to-the-editor columns are a fine institution, but when they are used for uninformed personal attacks their value decreases.

I was Gifford Pinchot's secretary during his second term as Governor of Pennsylvania.

I was also closely associated with him during the last few years of his life when we worked together on federal legislation in the field of forestry.

Perhaps, therefore, I am at least fairly well qualified to judge the relevance of particular forestry proposals to Gifford Pinchot's views.

Pinchot was a life-long advocate of direct federal regulation of cutting on private timber lands everywhere. So strongly did he feel on this score that he would have had all cutting on private lands done after marking by foresters employed by the U. S. Forest Service.

The complete abandonment of these principles by self-professed conservationists in forestry is a sad commentary on our times.

It is of a piece with the failure of The American Forestry Association to fight against such evil measures as the Ellsworth timber-grab legislation and the current give-away bills on public grazing lands.

As far as differences between the larger and smaller private holders are concerned, if the record of the big fellows is better than the little ones, it is still pretty miserable. And the big boys know or ought to know better and should be able to afford decent forestry practices. One might suppose that there was room for discussion, at least, on this issue, and that exchanges of personal comments will not get us very far.

I am writing this letter to you directly, instead of to the editor of AMERICAN FORESTS, because I have been denied the right to have my views published in AMERICAN FORESTS in the past, despite promises to the contrary. Enclosed are copies of the exchanges of correspondence with the AFA which may or may not be of interest to you.

I am sending a copy of this letter to AMERICAN FORESTS, and they can do what they please with it, or nothing. I am sending a copy of it also to the Forest Conservation Society of America, which is carrying the entire burden of the fight for genuine forestry at the present time in this country.

Anthony W. Smith
Washington, D. C.

(Editor's Note—Mr. Smith's letter is in reply to a letter from Mr. Folger that was published in the March 1954, issue of *American Forests*. In his letter, Mr. Folger raised the question as to whether some of the basic principles outlined by Mr. Smith at an initial meeting of the newly-organized Forest Conservation Society of America were in line with facts and conditions as they actually exist. Mr. Folger referred specifically to a recommendation calling for direct federal regulation of all timberlands owned or operated by larger private owners and said that in his locality, at least apparently the only people "who can even spell the word conservation" are the larger operators. Anent Mr. Smith's charges against AMERICAN FORESTS: the space in this column is open to any reader whose contribution is deemed timely, interesting and pertinent by the editor.)

Douglasfir vs. Douglas fir

EDITOR:

... Why do you print Douglasfir as one word? There is no reason for running the two words together any more than there is for shagbark hickory, Engelmann spruce or western hemlock. I dare say I am fussy but we have pretty definite rules for English in newspaper offices.

Stuart H. Perry
Publisher, The Adrian Telegram
Adrian, Michigan

(Editor's Note—The authority for scientific and common names of trees in AMERICAN FORESTS is *Standardized Plant Names* issued by the American Joint Committee on Horticultural Nomenclature. Douglasfir (*Pseudotsuga taxifolia*) is used as one word because it is not a true fir in the same sense as grand fir (*Abies grandis*) and others. Still something of a botanical puzzle, Douglasfir bears strong resemblance to spruce and fir as well as to hemlock and the yew.

"Yours For Wildlife"

EDITOR:

While I do not subscribe to the principle of earmarked funds for conservation work as endorsed by Carl D. Shoemaker in your AMERICAN FORESTS interview of April, I

thought that on the whole this was a most constructive article and one that representatives of both forestry and wildlife can study with profit. . . .

Charles W. Eaton
Gary, Indiana

EDITOR:

... That was a swell job of portraying both Carl D. Shoemaker's personality and his philosophy in your April issue of AMERICAN FORESTS. As Carl's friend and colleague in the National Wildlife Federation, I want you to know that I was happy to see this richly deserved recognition and tribute to a great conservationist.

Charles H. Callison
Conservation Director
National Wildlife Federation
Takoma Park, D. C.

April Issue

EDITOR:

Your April issue of AMERICAN FORESTS is the best I have received and you covered an immense amount of the United States. From the arctic country to the Big Scrub in Florida and from Oregon to Georgia. I have read all the articles especially the "Maples in Flower" as most of my life has been in New Hampshire where maple syrup and sugar is one of the staple crops. I still have a gallon every year as the cane syrup is a very poor substitute. The article the "Big Scrub" interested me especially since it is only 60 miles from here. . . . In fact the whole issue is so good I wanted you to know that at least one of your AFA family was pleased with it.

Edwin M. Crane
Daytona Beach, Florida

EDITOR:

... Your April issue of AMERICAN FORESTS is a honey. AMERICAN FORESTS continues to grow better by leaps and bounds.

Russell Lord
Editor, *The Land*
Bel Air, Maryland

Mechanical Mule

EDITOR:

I note in the March issue of AMERICAN FORESTS that you have a very interesting article "Meet the Mechanical Mule" by A. E. Allen. I find this subject of interest as I am promoting the Alaskan Hostels Association (nonprofit) and also an inventors' group, The Ingenious Associates, both of which are assisting in developing Alaskan trails to valuable mining and gold panning regions. In this connection, it occurs to me that the mule described by Mr. Allen has great possibilities and I would appreciate more detailed information on this conveyance and how it operates.

Joseph M. Czaplinski
Anchorage, Alaska

(Editor's Note—We suggest that Reader Czaplinski contact Mr. Dana Parkinson, U.S. Forest Service, Department of Agriculture, South Building, Washington, D.C., for further information on the mechanical mule.)

The Big Trees

EDITOR:

I was very much interested in Creighton Peet's article on the Big Trees of California in the February 1954 issue of AMERICAN FORESTS.

(Turn to page 63)

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Where AFA Stands

Association urges Senate Finance Committee to amend measure aimed at revising the Internal Revenue Code on grounds that the bill as it now stands removes incentive on the part of private owners to practice long-term forest management

THE American Forestry Association last month urged the Senate Finance Committee to amend Sections 631 and 272 of H.R. 8300, a measure to revise the Internal Revenue Laws, on the grounds that these two sections would tend to remove the incentive on the part of private owners to practice long-term forest management on their woodlands.

Acting on the recommendation of AFA's executive committee, Lowell Besley, executive director-forester, notified Eugene D. Millikin, (R., Colorado), chairman of the Senate Finance Committee, that Sections 631 and 272 in the measure would require that certain administrative and other expenses (including interest and taxes) which are now deductible from gross income be added to the adjusted basis for depletion in computing capital gains from the cutting of timber.

Mr. Besley said that the proposed changes would be directly contrary to the Association's recommendations, based on a thorough study, that have been incorporated in the AFA's new Program for American Forestry that this month is being mailed to 25,000 members for a referendum vote.

Mr. Besley told Senator Millikin

that "We believe that enactment of these two sections would tend to remove the incentive of private owners to practice on their timberlands the sound long-term forest management that means stable ownership, stable communities and an assured supply of forest products for the future. Actually, it discriminates against the owner in the business of growing trees as compared with other taxpayers with capital gains or even other timber owners disposing of their timber by outright sale."

The section of AFA's new forest program on the Internal Revenue Code, agreed upon by the executive committee after an exhaustive study by qualified experts, states in part, "... the federal Internal Revenue Code as it applies to timber has an important influence on the decision of private forestry landowners to practice the long-term forest management necessary to assure adequate timber resources upon which the nation can depend for its future requirements of forest products. Growing timber is a capital asset and without denying any forest owner the opportunity to include in ordinary operating expenses the costs of maintenance and protection of, and other ordinary recurring expenses incident to, the ownership of

his forest lands, its owners should be allowed the same capital gain or loss treatment under the income tax law as is allowed other taxpayers disposing of capital assets. Such equitable treatment encourages sound, long-term forest management and stability of ownership and communities."

By coincidence, the executive committee of the AFA met in Washington last month at the same time the Senate Finance Committee was considering the proposed amendments to the Internal Revenue Laws in executive session. At the AFA meeting such tax authorities as H. B. Shepard, forest economist, Federal Reserve Bank of Boston, Dr. Wilson Compton, former executive vice president of the National Lumbermen's Association, and Karl T. Frederick, New York City attorney, assisted in preparing the tax section of AFA's program. Other members of the executive committee who concurred were James J. Storrow, Society for the Protection of New Hampshire Forests; George O. White, state forester of Missouri; W. J. Damtoft, Champion Paper Company; Elwood L. Demmon, director, Southeastern Forest Experiment Station, U. S. Forest Service; P. R. Camp, Camp Manufacturing Company; and Don P. Johnston, president of the AFA.

FORESTRY PROGRAM APPROVED. Executive committee members who last month approved the final draft of AFA's new Program for American Forestry to be submitted to the membership for a vote are, (left to right): P. R. Camp, Camp Manufacturing Company; E. L. Demmon, U. S. Forest Service; W. J. Damtoft, Champion Paper Company; Fred E. Hornaday, AFA secretary; Don P. Johnston, president, AFA; Lowell Besley, AFA executive director-forester; H. B. Shepard, forest economist, Federal Reserve Bank of Boston; Karl T. Frederick, New York attorney; George O. White, state forester of Missouri; and James J. Storrow, Society for Protection of New Hampshire Forests. Not shown Leonard G. Carpenter, McCloud Lumber Company; Dr. Wilson Compton, Council for Financial Aid to Education; and Ovid Butler, AFA executive director emeritus.



Washington



Lookout

By ALBERT G. HALL

TIMBER ACCESS ROADS, THE KEY TO MANAGEMENT of the old-growth forests of the West have been authorized to the extent of \$24,000,000 annually for the next two federal fiscal years. The biennial revision of the Federal-Aid Highway Act, providing for \$1.9 billion for highways, roads and trails was signed by the President on May 6, as Public Law 350. While the law is one of authorization, rather than actual appropriation, it provides that funds authorized for the current fiscal year and those authorized in the revision for forest highways, forest development roads and trails (access roads), parkways, Indian roads, and public lands highways shall be immediately available for contract. The department charged with the administration of the funds is granted authority to incur obligations, approve projects and enter into contracts. While a department may thus enter into a contractual obligation for the federal government, the contractor may have to wait until appropriations are forthcoming before being paid.

THE REVISION OF THE HIGHWAY ACT, plus the proposed \$16,000,000 in the Department of Agriculture appropriations bill (for Forest Service) and the \$2,000,000 in the Department of the Interior appropriations bill for the Bureau of Land Management make possible, if not probable, a much enlarged access road program for the federal forests. Other forestry and related items in the road act revision are: \$22,500,000 for forest highways (major highways passing through federal forests); \$12,500,000 for roads in the National Park system; \$11,000,000 for parkways; \$10,000,000 for roads on Indian lands; and \$10,000,000 for roads on unappropriated or unreserved public lands.

A SOLUTION TO THE CONTROVERTED LANDS IN OREGON APPEARS to be on the near horizon. Brief background: There are some 465,000 acres of public lands in the state of Oregon over which jurisdiction has never been settled. They lie intermingled in the national forests, but have been claimed by both the Department of the Interior and the Department of Agriculture. In 1866 Congress granted the Oregon and California Railroad Company the odd-numbered sections in a swath 20 miles wide on each side of the track line, and permission to select other odd-numbered sections in another 10 mile strip in lieu of sections within the primary limits to which it was not able to obtain title. When the unsold O & C lands were reverted in the federal government in 1916, there were some 456,000 acres to which the company had not received patent and for which no application was pending. These had been included within national forests by various presidential proclamations between 1892 and 1907. Both Departments have claimed them; but over the years a compromise solution has been reached. At the present time, they are administered by the Forest Service, but there has always been a question as to what to do with the funds derived from timber sales.

IF THE LANDS ARE NATIONAL FORESTS, THE OREGON COUNTIES receive 25 percent of the income; if they are O & C lands, under the O & C Act of 1937, the counties would now receive 75 percent of the income. Not knowing what it could do legally, the federal government has withheld payment to the counties, and the funds have been impounded, pending a solution. Late in April of this year, a U.S. Court of Appeals decided that the lands are not national forests, never have been national forests, reversing a lower court decision. A pair of companion bills, S. 2225 and H.R. 5958, introduced by Senator Cordon and Representative Ellsworth, respectively, both of Oregon, seek a workable administrative solution. They provide that the controverted lands be recognized as O & C lands, for administration

(Turn to next page)

of the lands by the Forest Service as an administrative expediency, and for exchange of lands between the Forest Service and the Bureau of Land Management in an attempt to eliminate the jurisdictional problem. Hearings have been held on both bills, and it appears that they will be reported favorably and passed.

FEDERAL MARKETING AREAS, LIMITING PRIMARY MANUFACTURE of the sustained-yield harvest to certain communities or groups of communities, authorized by the O & C Act of 1937 and by the sustained-yield act of 1944, may face some rough going. On the O & C lands, 12 master units were established in 1947. Within these units, the sustained-yield harvest from O & C lands is required to undergo primary manufacture. This limits competition to the mills within the unit boundaries, and is designed to stabilize the local communities dependent upon the timber from the unit. The Forest Service has similar authority to direct the primary manufacture of national forest timber. Since 1944 the Forest Service has set up only a half-dozen such units. One national forest unit, the Lakeview Sustained Yield Unit, has long been a subject of controversy. Being located in southern Oregon, it excludes northern California mills from competing for national forest timber.

UNDER A NEW POLICY, THE FOREST SERVICE no longer appears as an advocate of federal units, but bases its decisions on the results of public hearings to determine whether the harm to be done to one community is greater than the good to be done to another. The last attempt to establish a federal unit on national forest land—Hood River—in Oregon was turned down by the Service. Last month, Secretary of the Interior Douglas McKay received a petition from Clatsop County, Oregon, requesting that the Columbia River Master Unit on O & C lands be abolished or that the marketing area be amended to permit Clatsop County mills to compete for the timber. The action by Clatsop County is likely to reopen the whole question of who should decide what mills and which communities are to benefit from the sale of federal timber. It is a battle between a controlled forest economy and open competition.

SMALL AREAS OF NATIONAL FOREST LAND MAY BE OFFERED FOR SALE if H.R. 8880, introduced by Representative Hope of Kansas, is enacted. The bill provides that the Secretary of Agriculture may sell isolated parcels of narrow projecting strips of national forest lands or forest lands immediately adjacent to urban areas when he finds such lands better adapted to commercial, agricultural, residential or other private purposes than to national forest purposes. There is nothing in the bill that threatens the national forest system. Properly applied it can strengthen the national forests by ridding them of small areas difficult to administer and by reducing local pressures against the system.

ADDITIONS TO NATIONAL FOREST LANDS ARE PENDING as the Bureau of Land Management, Department of the Interior, gradually divests itself of public lands in or near the national forests. In Idaho, 12,356 acres are scheduled for transfer to the Forest Service; in South Dakota 10,246 acres are to be transferred; and another 5854 acres in or adjacent to the national forests in Oregon will be turned over to the Forest Service.

FURTHER DEVELOPMENT OF THE ALASKAN NATIONAL FORESTS will begin this month when the Forest Service offers for sale three billion board feet of timber. The successful purchaser will be required to construct a sawmill of 40 million feet annual capacity or other processing plant by 1958, and a pulp mill of 80 ton daily capacity by 1963.

FOREST SERVICE TIMBER SALES PROCEDURES AND POLICIES were the subject of joint discussion among Forest Service timber management men and representatives of the forest products industries in a week-long meeting in Washington, D. C., in April. It is anticipated that from the meeting will come a few changes in procedures that will assist in the orderly marketing of national forest timber. One of the chief results of the conference was a better mutual understanding of problems and objectives.

TO SPEED UP SALVAGE OF WINDTHROWN AND INSECT AND DISEASE DAMAGED old-growth timber on O & C lands, the Bureau of Land Management has authorized the issuance of temporary right-of-way permits at the discretion of its area officials. Regulations governing rights-of-way have required long-term agreements involving reciprocal rights-of-way. The basic timber sales and right-of-way regulations are in process of revision, following the recommendations of a special survey team. The temporary measure permits the BLM to carry on a normal business load, pending the issue of the revisions—probably late this summer.

EDITORIAL

Genesis of a Forestry Program

The first phase of a big job of work—the revised Program for American Forestry of The American Forestry Association—is now nearing completion. When the AFA executive board on May 17 placed the “Q.E.D.” on the final draft it spelled the end, for the present at least, of months and months of painstaking committee work. Now the final draft goes to the membership for acceptance or rejection. Every member of the AFA will receive this ballot.

This program was built, step by step, by the most representative cross section of forestry and related renewable natural resources knowhow in the nation. It started a year ago this month at Higgins Lake, Michigan, when 34 selected representatives wrote the first draft of the revised program. Given wide publicity, this revised program was then submitted for the close scrutiny of the entire nation at AFA's Fourth American Forest Congress last October.

As is to be expected when an association submits its future platform to the public at large, there were a few areas of disagreement. The surprising thing was that those areas of disagreement were surprisingly small and that they were confined almost exclusively to one group.

Next came the task of shaping the final draft—the job of coordinating the Higgins Lake proposals and the prevailing sentiment as revealed at the Congress. This was carried out by special committees drawn from the directors and officers of the association and coordinated by Executive Director—Forester Lowell Besley. In approving the work of these committees on May 17, the executive committee unanimously agreed that, subject to the wishes of 25,000 AFA members, a useful tool has been forged that will serve forestry well in the next decade.

Members of the AFA now have a great responsibility to study this program, vote on it, and to make sure their ballots are returned to AFA to meet the deadline of July 15 at midnight. The final program you approve will represent *your* voice in forestry and related resources affairs in the next important years.

But we would like to reiterate that this all-inclusive program, important as it is, represents only the first phase in what must be a solid and continuing effort to activate every phase of it. As a member, it is your duty to vote this program and to make sure it represents your considered views. The officers and staff of the AFA face a solemn obligation to push this program for all they are worth for the program itself is meaningless unless it is put into action. Only in this way will we meet the essentials of forest protection, improve the national timber crop, and obtain the maximum of economic and social services from our forests by realistic application of the principle of multiple use.

Evaporation in the Dinosaur

Judging by letters *American Forests* has received on the subject in recent weeks, Secretary McKay and his capable young staff are rapidly losing ground in the battle of evaporation statistics as they relate to the dam Interior proposes to build in Dinosaur National Monument. This controversy evolves around the department's decision to press for the Echo Park Dam in the monument as a part of the multi-million dollar Upper Colorado Storage project to harness the Colorado. Crux of the Department's case as presented to the House Committee on Interior and Insular Affairs was that the value of water outweighs that of national monument scenery in this particular case. Echo Park, the Department said, is a key link in the whole upper Colorado project. Evaporation losses on proposed alternate sites that would save the monument would be too great to justify their construction, Interior said.

Since the evaporation figures presented to the committee by the Department were largely based on Bureau of Reclamation figures, there were those who were inclined to take them with a grain of salt when they were first presented. Many others weren't inclined to take them at all. Nevertheless, in view of the great importance of water to western states, *American Forests* believed that the subject should be thoroughly studied and that final decision should be held in abeyance until all the facts were in. It is still of that opinion.

However, this Echo Park thing has been going badly from the first as far as Interior is concerned. As any old hand in Interior could have told the Secretary, the public has reacted unfavorably and with characteristic vigor. And while proponents of the project have managed to squeeze their bill (H.R. 4449) out of committee the closeness of the vote (13 to 12) would indicate that the measure faces rough handling when it reaches the House floor.

Now comes Under Secretary of Interior Ralph Tudor with the announcement that some of the evaporation figures furnished to him by the Bureau, have, as it were, largely evaporated. As regards the proposed high Glen Canyon Dam, for example, these estimates were off by as much as 140,000 acre feet. In view of these discrepancies, Mr. Tudor has informed Committee Chairman William H. Harrison that he has ordered a whole “recalculation” of the evaporation factors on all the reservoirs proposed for the Colorado project.

Such recalculation certainly seems to be in order at this point, preferably by some impartial agency such as the Hoover Commission, set up to provide a water resources pattern for the nation. Interior should recommend holding up the Colorado River Project until such a study is made. It should also admit that it has failed to make a sound case for Echo Park Dam in the Dinosaur National Monument.

The Muskingum Conservatory District presents a
readymade blueprint for the rehabilitation of
sick watersheds. Control of water is the key



Photo by Gratz

Muskingum Revisited

By JAMES B. CRAIG

Bryce C. Browning, at the helm
of the project since its inception

Ten picturesque, man-made lakes last year brought two-
and-a half million visitors to this once flood-scarred valley



Tree planting on dry, eroded hillsides is preventing siltation
and giving the chain of lakes an attractive necklace of greenery





Photo by Herrin F. Culver, Soil Conservation Service
Man-made Lake Leesville and reclaimed, contoured farmland tells, in part, how the web of renewable resources—soil, water, forests and wildlife—is being brought into balance in the valley

FOLLOWING the great flood of 1913, many sections of Ohio's flood-ravaged Muskingum Valley presented a dismal picture to any tax assessor. What with a series of periodic floods over a period of years capped by the biggest one of all, these stricken areas were in a state of shock. Whole villages on the Muskingum river front presented a flood-buffed appearance. New building, obviously, was at a standstill. Once prosperous farms were erosion-scarred. And the grim story, all too soon forgotten, was starkly told by the hot, dry hillsides and once-rich farmlands that had been skinned of their riches and made easy prey for bigger and bigger floods that struck on schedule at regular intervals.

These awful things were common occurrences in the United States 30 and 40 years ago and too many people accepted them as Acts of God and quite inevitable. Consequently, a great sadness hovered over many flood-blighted, erosion-ravaged regions—the sadness that always occurs when land is permitted to die. Today, we still have floods in the United States but few people accept

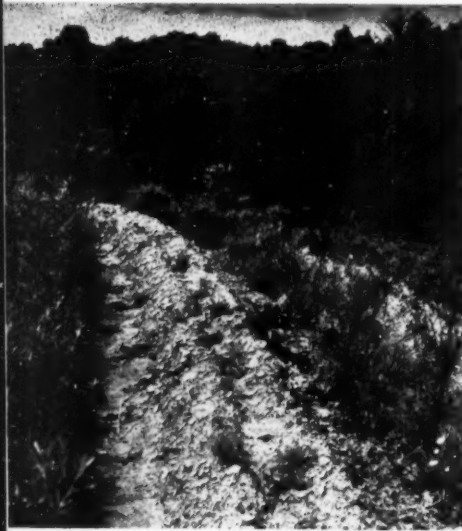
them as inevitable and most people are determined to do something about them. And one of the first regions to accept this challenge were the people of this hard-hit Muskingum Valley. How this barren land was plucked from the brink of ruin and converted into a modern-day Garden of Eden is one of the great planned conservation miracles of modern times. Today, the tax assessors travel in pairs in the Muskingum Valley. And a recent tour with two present-day appraisers told the story of Paradise regained on the Muskingum Valley tax duplicate. Riding around the Tappan Reservoir, one of ten lakes created to control Valley water, the assessors kept repeating, "There's a new one," "There's another" and "There's another." These gentlemen were referring to new summer cottages built around the lake rim that weren't there a year ago.

Summer cottages mushrooming on nine of the ten man-made lakes represent just one phase of the new building that is going on, the appraisers confided. Making neat little notes as they pursued their happy task, they revealed the presence of

five new industries in the Valley with more on the way. They pointed with pride to two-and-a-half million visitors who now come to the Valley to picnic, swim, hunt, fish and vacation. They refer to a greatly expanded retail business such as that boasted by the city of Wooster. Of the new stores—and they range from hunting and fishing establishments to attractive motels with a full line of merchandise—not the least of them is Ed Coultrap's "World's Most Unusual Store" built near Tappan Lake and 11 miles from the nearest town. At Coultrap's, the first haircut is free and sandwiches, with two thick slices of meat in the center, are five cents a throw. Dealing in everything from live bait to horse collars and women's apparel, Coultrap built his huge establishment in the conviction that this revitalized Valley couldn't miss. Customers who swarm in every week from a radius of 100 miles—sportsmen, clay workers, coal miners, dairy farmers, steel and rubber workers and makers of refrigerators and roller bearings—are conclusively proving that he was correct.

Finally, this Valley's transforma-

tion is told in both the complexion of the people and of the land. Both are healthy. Farm homes are spruce and neat. Shiny new cars parked in their drives and television aerials 50 feet high proclaim that these folks are keeping up with what is going on. The old air of indifference is gone. The people are briskly sure of themselves. Where once there was near despair, there is now happiness and contentment. The land itself



Closeup of the Muskingum terrace or "workbench" which holds soil on hill-sides and on which trees are planted

has become serene and with the exception of the depredations of strip mining, has lost most of its old turbulence. Young planted forests on once bare hillsides, beautifully contoured farm lands, fat herds of cattle, miles and miles of velvety pasture land, fragrant orchards, well-stocked farm ponds and the advent of new industry—all these things tell the story of a revived land.

Chief architect and guiding spirit of this rehabilitation program is a unique organization established June 3, 1933, known as the Muskingum Watershed Conservancy District. That water and its control was the key to solving the ills of this scarred valley was quickly recognized by this pioneer group. Floods would have to be controlled. But there the comparison between much land-use thinking of three decades ago and that of the young District ended, for the new organization believed that a series of small dams on upstream tributaries rather than a big one on the marauding Muskingum River

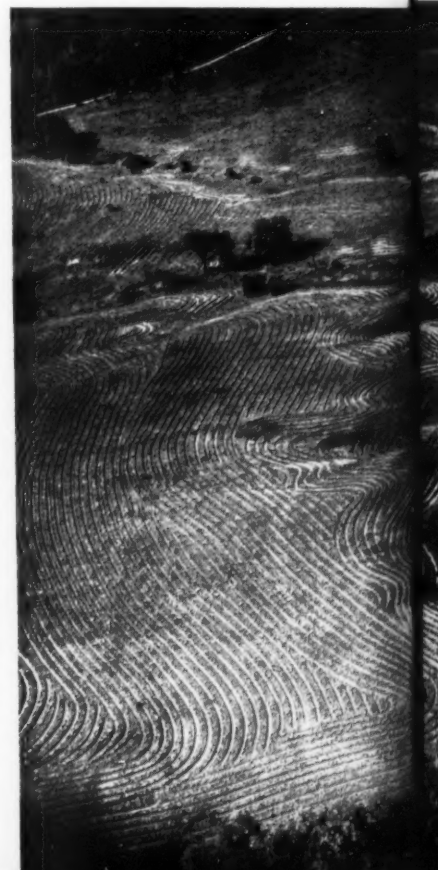
itself, was the practical answer. Furthermore—and this was little short of revolutionary 30 or more years ago—the District's leaders did not see the rehabilitation program as any piecemeal proposition. In an era of intense "individuality" by specialized conservation groups, the District saw all elements of the movement—water management, forestry, soil conservation, recreation and wildlife management—working together in harmony as a part of a closely-integrated pattern. Finally, the over-all purpose of the District would be to revive every square foot of the whole drainage area for whatever purpose it was best suited.

Visitors from all over the world who travel to Ohio today to see the Muskingum Valley quickly perceive that water is still the key in what has now become a land of lakes. Great floods are a thing of the past and teen-agers living in the Valley have no idea of what one is like. And while the land-use program—the forestry, the soil conservation, the recreation and the wildlife management—all continue developing apace, there are now indications that the over-all program may be pivoting toward a new phase of service, that of supplying water for irrigation of farms, municipal use and for industry. True, this may be some distance away, but two significant points stand out in bold relief. These are: first, that the state is going to need more water; and secondly, that the Muskingum District could, with appropriate action by the conservancy court, go into the water supply business and construct additional reservoirs for this purpose.

What is the Muskingum formula? Can it be emulated elsewhere on other worn-out watersheds? These are the inevitable questions that arise when visitors get down to cases with Bryce C. Browning, the District's secretary-treasurer and one of the nation's outstanding conservationists. And the answer to most of these questions is "yes," says Mr. Browning, *providing* the people living in those valleys are willing to plan and program with meticulous care. For example, a vitally important first step is a survey by local residents and the appropriate state agency to determine first of all "Is A Watershed Program Necessary For This Valley Or Isn't It?" Armed

with these facts, the leaders must next SELL the public on the importance of their program, for no undertaking of such magnitude can be carried out without the support and understanding of the public.

With the initial organization perfected, the program leaders must be prepared to work in *partnership* with the many agencies of government, both state and federal, that are equipped to help them. True, it has been fashionable in recent years to castigate government, especially the federal government, as profligate and arbitrary. The fact remains, that government agencies, in judicious hands, are set up to provide many skilled services that small valley programs are powerless to provide. Certainly some 20 or more state and federal agencies who co-operated in the Muskingum development worked together admirably and with a minimum of friction. And take Mr. Browning's word for it, the rehabilitation of a sick watershed is no job for prejudiced men or "go-it-aloners." The secret, he thinks, is a program where the control is vested in the local authority and where the various government agencies cooperate, but do not

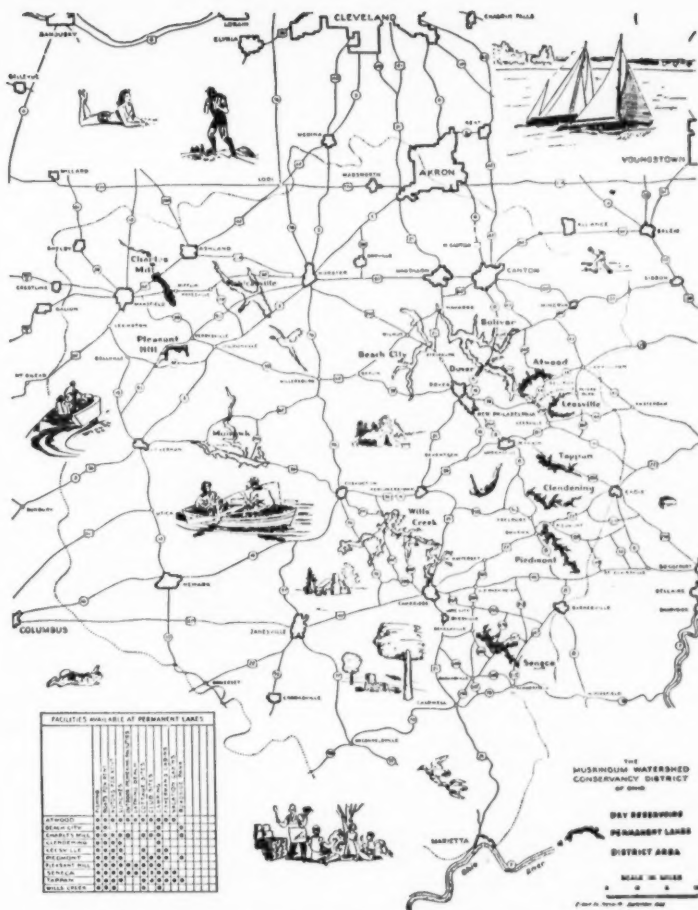


Contour ridges, or terraces, for tree planting along shores of Lake Atwood

dictate, in carrying out specific missions on a true partnership basis.

"Partnership," one of the finest words in the English language, is as American as apple pie. Thousands of people in hundreds of embryo watershed movements ranging from the Cuyahoga River Watershed of Ohio to the Salt-Wahoo Watershed Association in Nebraska are giving the word heavy usage as they plan their programs of action. Moreover, with the election of General Eisenhower to the Presidency the word assumed new significance. As used by the President, the word "partnership" has a sort of warmth and ringing sincerity.

You feel that he means what he says when he speaks of true partnership by the local governments, the states, and the federal government in getting things done. Furthermore, as spearheaded by Sherman Adams, Senator Carlson, Congressman Hope, and others, the administration displayed sound judgment in instigating a new type of partnership program—the plan to establish 50 or more "pilot plant" upstream watershed demonstration projects throughout the nation. Unquestionably, this new program will prove a rallying point for the grow-



The District has paid almost \$400,000 in taxes on 65,000 acres of land in an 8000 square mile drainage area in 14 Ohio counties

ing list of Americans who see water as the key to many of our conservation and economic problems. All this incipient water movement now needs is the spark that will ignite a national crusade of major proportions.

In view of this rekindled interest in watershed programs across the nation, a re-examination of this continuing program in the Muskingum that yearly yields greater dividends to the state it serves, would now appear to be in order. The program of the Muskingum Watershed Conservancy District still remains the classic answer, the *fait accompli*, in valley programs directed and controlled at the local level. For here is the logical answer to those who rebel at more TVA's and other programs where federal control is considered too topheavy and those, who once they come face to face with the practical facts of life in the rehabilitation of large drainage areas, must admit that few such areas have either the wealth or the know-how to pro-

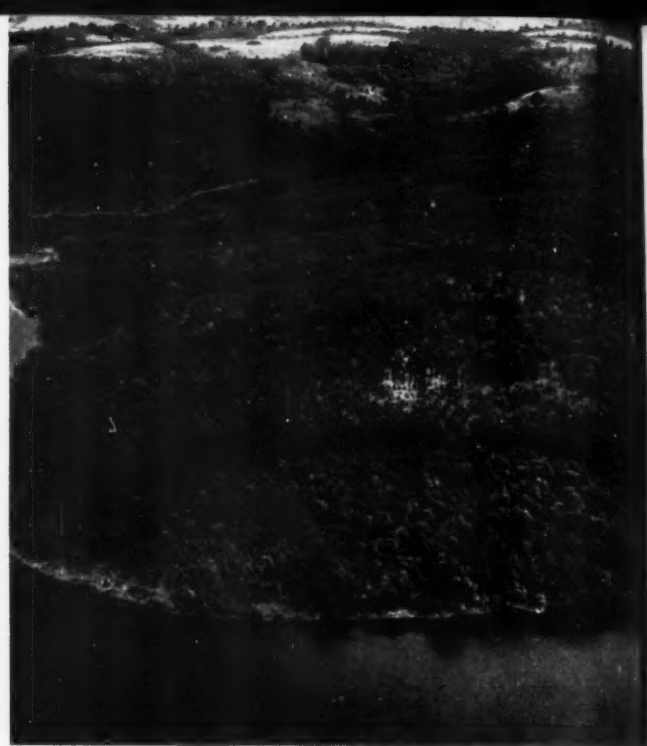
vide all the services necessary to put them back on their feet. As Raymond A. McConnell, Jr., recently wrote in the *Journal of Soil and Water Conservation* (and he couldn't have written a better definition of the underlying philosophy of the Muskingum if he had tried), "Partnership (in watershed development work) requires mutual understanding and confidence all around. It requires also a clear division of functions and responsibilities among the several partners, and a close co-ordination, horizontal and vertical. Each must know what the other is doing and intending and must understand why. *All must run on parallel tracks (italics ours).*"

To a reporter for whom the war and its destruction was still a comparatively fresh memory five years ago, a first visit to the Muskingum was like walking into a Shangri-La of wise planned use many decades ahead of its time. Cradle of some of the most extensive soil and water experiments in the world, in a little





Lake Piedmont is one of the larger lakes in the chain of flood control reservoirs. Note the growth of young pine



Photos by Herrin F. Culver, Soil Conservation Service
Old fence rows of abandoned farmland is in evidence in this air view of Lake Leesville and its contour-planted pine trees

over a decade and a half the District had been the guiding hand in the completion of a 45 million dollar flood control project, including 14 dams, ten artificial lakes and four dry reservoirs, that had banished the fear of floods from the Valley forever. Its land-use program led off by a tree planting project (a quarter million trees a year) was busy providing a necklace of forests for each of the picturesque lakes and was solving the problem of 20,000 acres of District-owned land considered unsuitable for any other purpose. With the creation of water and trees, an influx of recreationists immediately began and \$600,000 was provided for recreational development, a program that dwarfed anything recreation-hungry Ohioans had seen up to that time. This \$600,000 was borrowed by the District and is being repaid out of income from the improvements.

Created by a conservancy court consisting of one Common Pleas judge from each of the 14 counties embraced in an 8000 square mile drainage area, the District is an agency of local government. But here the comparison to much government as we know it ends, for the District pays its own way. It receives no tax income and has paid roughly \$400,000 in taxes on its 65,000 acres of land that constitutes the periphery to its chain of lakes.

Of the total income of \$377,538 in 1953, 53.5 percent was derived from recreational activities—including park admissions, concessions and swimming, cottage and club sites, boating permits, vacation and fishermen's rental cabins and the Division of Wildlife lease. Lumbering and Christmas tree sales contributed 23 percent of the total and farm and land activity—including farm crops and rentals, mineral leases and land sales—provided 21.2 percent.

For the benefit of those who sometimes ask "Just what exactly is a conservancy district?" it might be defined as a public corporation operating over an entire geographic unit (in this case a watershed or all the land draining into all the tributaries of a river system) without regard to arbitrary political boundaries. The District is empowered by state law to levy assessments, condemn land, enter into contracts, cooperate with state and federal agencies, and otherwise to operate in furthering flood control, water and soil conservation, river regulation, purification of streams, forestation and recreation.

Obviously, the creation of a corrective organization of this type with very broad powers comes as the result of bitter adversity—is set up to cure adverse conditions considered incurable by any other means. The motivating forces in the creation of the Muskingum District were a suc-

cession of paralyzing floods and damaging droughts, specifically the great flood of 1913 and the drought of 1930. The basic task to be accomplished, the Zanesville Ohio Chamber of Commerce decided, was to bring the area's water under control and to have a sufficient quantity of it available at the right place at the right time. With the Zanesville Chamber and its active secretary, Bryce Browning, taking the lead, a survey team headed by Dr. Arthur Morgan was set up to study the problem. The team came up with some revolutionary recommendations. These were: 1) That the Zanesville flood problem was not a local one and must be approached on a drainage area basis; 2) Any solution should include not only flood control but water and soil conservation, recreation and any other feature which might be economically justified; 3) State and federal agencies had a stake in any program so broad in concept, and assistance from these sources was necessary for its financing.

That was the start. How the District was organized and how it qualified for its first PWA grant of \$22,090,000 under President Roosevelt's New Deal is all described in the article "The Miracle of the Muskingum" (AMERICAN FORESTS, July 1949). The young District was soon experiencing a period of hectic

activity. At the peak of construction, work was proceeding simultaneously on 14 large dams, nine railroad relocations, three gas line relocations, four levees and one power transmission line in addition to 35 lesser contracts. Courthouses in the District were beehives of activity as 6800 property units were acquired by the District, hundreds of miles of highway relocated, whole towns and cemeteries moved.

From the first the project moved according to District plan with the dams and reservoirs created on upstream tributaries of the Muskingum River. Originally, Muskingum's planners had been warned that state and federal agencies would not work together willingly in a program developed and supervised by local government. The reverse proved true. At the start, the District laid down a policy that it would not willingly duplicate the work of any other agency of government and it has stuck to it.

Certainly no finer example of integration of activities with control at the local level exists today than in the Muskingum Valley. The Corps of Engineers under such outstanding leaders as the late Colonel J. D. Arthur, Jr., and an array of equally competent successors gave the Valley people the flood control they so sorely needed. To the extent of their authority they cooperated fully in attaining the broad objectives of the local organization. With the dams and reservoirs built, the Soil Conservation Service, recogniz-

ing that the lands adjacent to the water must be stabilized if siltation was to be prevented, "loaned" the fledgling District one of its outstanding foresters, H. P. Garritt, who has continued on "loan" to the District ever since. Under authority of a state law sponsored by the Muskingum people, the State Highway Department took over the relocation of affected highways, allocating as much money for highway relocation and maintenance in the District as had previously been required to clean up after floods. The Ohio State Department of Highways has done a consistently good job. And the steadily-growing list of fishermen to the Muskingum lakes speaks eloquently for the corrective restocking work currently being carried on under the Ohio Division of Wildlife.

Forestry and forests must always go hand in hand with large scale rehabilitation programs in which water control is the key activity. In Forester Garritt the District got the right man. To him, a bare hillside unsuitable for agriculture is a challenge. In ringing Muskingum's chain of lakes with young, vigorous trees, Forester Garritt invented a plow that terraces hillsides. These terraces—Garritt calls them "work benches"—help to hold water on the hills and are also the path followed by the Garritt hillside planter with hydraulically-adjusted wheels that keep the planter level no matter how steep the slope. This tractor-hauled planter can operate on anything up to a 2-1 slope and its operator can plant 43 trees in two minutes or about 1290 an hour.

More recently, at the recommendations of its advisory committees, the District has installed a new sawmill. Designed by Forest Laboratory technicians, it is outstandingly modern and adds greatly to the value of the District's demonstration program. When it is considered that this mill will be supplied chiefly by improvement cuttings for the next five years or more, some people expressed doubt as to whether enough high-grade logs could be turned out to make the new mill pay. Mr. Garritt is not included in this number.

"I have the timber" he told us recently. "If you've got the time I'll take you out and show it to you." When roads aren't available to get it out by truck he turns to the water using a sectional barge which is taken apart and moved from one lake to another as the harvest is concluded. Christmas tree farming is also proving an increasingly profitable

operation in the District. As to the future, Garritt confessed that he was completely sold on the "tree farm family" idea that has been exploited so admirably in the South by Nickey Brothers, the DeWeese Lumber Company, and others.

While Garritt visualizes an expanding forestry future with the District serving as the chief hub of in-



Sectional barge, used for hauling logs, also transports island visitors



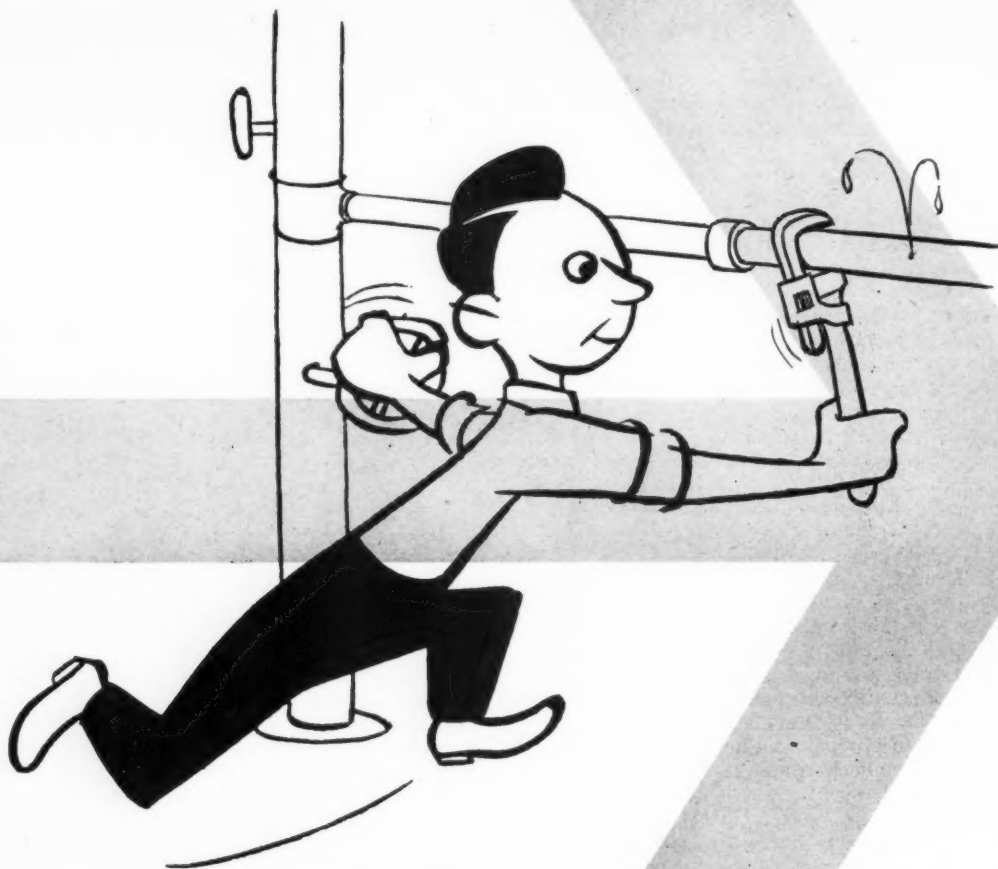
A sportsman's paradise, the District draws visitors from a three state area

fluence in spreading forestry in an ever-widening radius by means of private corporations, capable Farm Manager Harry Curtis is pursuing a somewhat different course. In the interest of efficiency, the District is consolidating its land holdings and disposing of certain of its dry reservoir lands.

While this orderly liquidation will obviously require a number of years, Mr. Curtis, in a sense, is cheerfully working himself out of a job in the belief that "private owners do it better." Continuing on this note, Mr. Curtis said, "Originally, our plan was to build up this land and increase its value. We are doing this. But most of these tracts are scattered and since my management work requires that I travel in a radius of

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"Do-it-yourself" addicts are buying more than three billion dollars worth of materials and tools annually

Return of the Handyman

By E. JOHN LONG

MAYBE the whole thing is a throwback to the days of our Colonial ancestors, when everyone had to be a "do-it-yourselfer" or die.

Then a man, and, to some extent, a woman, too, had not only to fight off Indians and alien fellow settlers, but also prove that he or she could use simple tools and hands to provide shelter, furniture, floors, fences, wagons and scores of other things needed in daily pioneer life.

Abundant forests, which had to be cleared anyway to make farm and grazing land, supplied the raw material for most of the items used in this pioneer civilization. Consequently, one of the first skills of our ancestors had to be the working or fashioning of wood.

This being such an old story, you may wonder why all the recent whoopla about "do-it-yourself" or "how-to-do-it." Pick up almost any newspaper or magazine (including, as you can see, this one!) and you will find some reference to the fastest-growing trend in America today. There will be at least one article or photograph, or maybe a regular department, explaining how you can make, repair, enlarge, fix, beautify, renovate, or otherwise improve your dwelling place with the aid of a few simple instructions, some tools and your own lily-white hands.

In about one out of every six American households there is now a

self-made handyman who in public life may be a banker, broker, doctor, teacher, insurance agent, government employee or other person who normally uses no piece of machinery except a pencil, pen or typewriter to earn his daily bread. Several thousand business and manufacturing concerns, however, recognize these amateur jacks-of-all-trades as an expanding market for lathes, saws, hammers and tools of all kinds, as well as lumber, plastics, tiles, metals, small motors, paint, varnish, wax, nails, hinges, and scores of other items.

The movement is a little too new to have produced much in the way of official government statistics, but trade associations estimate that more than 22 million persons show aggra-

vated symptoms of "do-it-yourself-itis" (for want of a better name), and that they are buying more than three billion dollars' worth of materials and tools annually in the treatment thereof.

Here is a breakdown prepared by the very responsible Bureau of Advertising of the American Newspaper Publishing Association in 1953:

Lumber and building supplies: total sales, \$2,750,000,000; average per household, \$60. Paint and wallpaper: total sales, \$582,200,000; average per household, \$12.80. Floor and wall tile: total sales, \$116,085,000; average per household, \$2.55. Power tools: total sales, \$80,000,000; average per household, \$1.75. Total sales, all categories: \$3,528,285,000; average per household, \$77.10.

The power tool figure, while small in comparison with other expenditures, is significant in that it represents an expansion of hand tool activity, and a more serious and sustained interest in the vogue as a whole.

Lumber of all kinds is the most widely-bought raw material, and probably will continue to be because it is economical, light, available anywhere, and capable of many kinds of finishes, as well as an almost unlimited number of uses. Plywood, unknown in Colonial times, is a prime favorite; nearly a quarter of last year's production going to home carpenters.

But to return to the question: Why should there be such a rumpus about the matter at this time? History provides an answer. For years following the settlement of the country the trend was toward the development of specialists in crafts and trades, including carpenters, cabinet makers, painters, plumbers, tinmiths, etc.

People in other occupations, including a growing number of office and other sedentary workers, simply hired a specialist when they wanted anything done, although, as time went on, they often had to hire a lot of them before they were through. The old-fashioned handyman, who could fix anything, gradually disappeared, or was hired on a per diem basis by big builders and contractors.

Then came that changer of many people's lives—World War II. Sedentary workers and others in nontechnical occupations, such as waiters, messengers, salesmen, were drafted into the armed services. Some were given manual jobs. Other civilians learned to use machines and tools for the first time in defense plant

work. Still others had to do their own fixing at home, because specialists were not to be had.

The net result: rebirth of the American handyman on a vast scale. When the serviceman first came back to his former sedentary job after the war he was happy. Soon, however, he began to want to do something with his hands, if not on the job, then in recreation hours. Or he was pushed into doing things around the house by rising labor costs or by local shortages of specialists—the average carpenter, bricklayer, painter, and plumber preferring more or less steady work with the big postwar housing developments or building industry to waiting for the shop phone to ring.

The initial do-it-yourself movement was small, but by last year it had swept the country like an epidemic. "Do-it-yourself shows" held in New York, Washington, and other metropolitan centers were drawing bigger crowds than any other expositions, and visitors included many elderly retired people, not usually considered a buying market. Manufacturers of power tools, including a revolutionary new combined lathe, circular saw, disc sander and drill press, report business booming as never before.

Local lumber dealers, who once had a few big building concerns and contractors as clients, have added new salesrooms and parking space for the convenience of the buyer who may leave only \$5 or \$10 in the cash register, *but he does it often!*

"We love 'em, these do-it-yourself boys, and gals, too," one enthusiastic retail lumber man told me. "They don't haggle about the price, or try to beat you down, as the contractors or builders do. And they may be a lifesaver, if and when the postwar housing boom begins to taper off."

Plain lumber in largest demand is shelving, two by fours and the standard planks in all sizes. Partly finished items include doors, window casements, flooring, shutters, arbors, gates, and trellises, all unpainted, but smooth and ready to be adapted to use. The kinds of wood most favored are yellow pine, Douglasfir, ponderosa pine, hemlock and the various oaks, although there is some cypress, gum, redwood, and cedar. Much of the need for fir is in plywood, although plywood for home or office panelling (that can be attached right over old walls) now comes in a variety of finished woods, including birch, oak, Honduras ma-

hogany, walnut and Philippine mahogany.

Because some kinds of plywood now on the market are prefinished at the factory, and can be installed by anyone who can saw a board or drive a nail, plywood is the favorite of rank beginners among "do-it-yourselfers." The panels come wrapped in kraft paper, complete with instructions, holding-clips and nails, and they can be applied to studding in new houses, or to any nail-holding surface in old ones. Plywood walls never need repairs, nor any more attention than a piece of furniture, to keep them looking beautiful.

Another growing lumber market developed by "do-it-yourselfers" is fencing. Most new homes come with sodded lawns, a few decorative shrubs, and that's all. It isn't long, however, before the average suburbanite has children or a dog, or both, to contain; or a garden that he wants to shelter from the neighbors' children and dogs. A picket fence is the most economical solution. These now come, knocked-down, in some 30 different styles, of red and white oak, redwood and cedar, with a semi-rough finish which holds paint better than a smooth finish. Gates can be obtained ready to hang or to assemble.

Most "do-it-yourselfers" admit that they got into the game for practical reasons, that is, the high cost of getting anything done at even the minimum hourly or job rate charged by professional labor. Under present union rules, also, it is sometimes necessary to hire four or five different specialists to complete a single

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Unmanaged range land is poor land, with low carrying capacity and soil erosion. This is unprotected area adjacent to J. Neils managed land

Twin Crops in the Pines

The twin crops on the forest acres of the J. Neils Lumber Company are grass and trees. Both are grown under sustained production management



Tree farmers of eastern Washington are proving that grass and trees can be companion crops on same managed acres without "getting in each other's way"

By ALBERT ARNST

IN the whispering pines of eastern Washington tree farmers are proving that grass and trees can be companion crops on the same managed acres. Harvesting prime cattle and sheep as well as sawlogs from forest lands is no longer a theory, say these practical-minded land managers. Both forage and timber can be grown as sustained-yield products "without getting in each other's way."

The list of companies with successful range management programs proves that. It includes the Cascade Lumber Company, at Yakima; the J. Neils Lumber Company, at Klickitat; the Biles-Coleman Lumber Company, at Omak; the Twisp-Wagner Lumber Company, at Twisp; and the Klickitat Pine Box Company, at Goldendale.

High on the list of tree farmers who have been doing pioneer work in teaming up grass and trees is the J. Neils Lumber Company.

"Our range management program has been considered very successful. We plan to continue it, because it has helped pay carrying charges on timber lands being held over for a second crop, as well as building up the forage resource."

That's the report from General Manager Walter Rathert, who helped initiate the project 14 years ago. Agencies who have helped work out technical details of the long-range program include the College of Forestry at the University of Washington in Seattle, the U. S. Soil Conservation Service and the State College of Washington at Pullman.

The J. Neils Lumber Co. contracts annual grazing rights on 97,584 acres to 20 permittees, who run 2591 cattle and 2160 sheep on designated grazing blocks.

During the development period this overall range improvement program called for expenditures totaling about \$20,000. Approximately half of this amount was for fencing to control livestock "traffic," \$3000 for reseeding of depleted ranges and \$4500 for water development. Other expenses included a range rider's cabin, a portion of his salary and administrative costs. Tax payments are not included.

During the 14-year period income from grazing fees exceeded the range

improvement and operating costs by about \$40,000, an annual net return of approximately \$2800 on the direct range program expenditures. This is a pay-off of about three cents an acre. It helps defray county and state land and fire protection taxes and the company's own fire prevention program, all of which have averaged about nine cents an acre yearly.

Principal business of the J. Neils Company is lumber and box shuck manufacturing. The millsite is located 13 miles north of the Columbia River from Lyle, up the narrow Klickitat Valley. The modern mill, with an annual capacity of about 42 million board feet log scale, employs 235 men and women who, for the most part, live in the town of Klickitat.

One hundred loggers work in the woods northwest of town about 35 miles, with modern Draper Springs Camp as headquarters. The nucleus of this crew is made up of married men living in 45 modern homes built by the company. Many of the others live in their own homes in and near the picturesque town of Glenwood, nestling under queenly Mt. Adams.

Logging operations are conducted on 100,000 acres of company-owned land and 90,000 acres of state and Indian Service lands. J. Neils has long been known for its progressive forest management policies and has pioneered in developing many techniques in selection cutting.

"The problem area which first started J. Neils foresters thinking about range management possibilities was the Plateau block. This is a gently rolling tableland west of the Klickitat river and north of the town of Klickitat. The company owns some 30,000 acres in this unit, which is in a transition eastside-westside forest type, with a high percentage of Douglas in the original stand," says Rathert in his review of the original problem.

In 1939 company logging operations were transferred from the Plateau block north to the Glenwood block. This has been rated by foresters as being among the top

producing ponderosa pine lands in Washington.

By blocking in contiguous state, Indian and federal ownerships and adhering to a well-coordinated cutting program, it is hoped that enough timber will be available to assure continuous operations before returning to the Plateau block for a second log harvest. By that time natural reforestation, under complete fire protection, will have restocked all the lands. Much of the young growth already there will then be mature for cutting.

Since 1936 the College of Forestry at the University of Washington had been sending its senior class in forest management to the J. Neils operation. In this outdoor laboratory the young foresters learned the practical side of tree growing.

"Under the guidance of former Professor Walter H. Meyer, they prepared reports on timber cruises, fuel types, slash disposal, cutover land examinations and grazing reconnaissances. Many of the recommendations were adopted progressively by the J. Neils Company as a substantial part of its management plan," states Gordon Marckworth, dean of the College of Forestry at the University.

In a 1938 grazing survey the senior class recommended that the 30,000 acres of cutover company land in the Plateau block be retained for timber production. Stressed was the importance of making the leased forage resource help defray annual fire protection and tax costs.

But the report also pointed out that if this were to be done, present grazing misuse would need correction. Abuses specifically cited included dissipation of the range cover, browsing and trampling of natural reproduction and appearance of erosion scars. This was almost an ultimatum—"if you don't manage the range, you may not get a full tree crop."

In late 1938 the Soil Conservation Service also became interested in the company's land-use problems. Preliminary inspections indicated possibilities for range management demonstrations on the Plateau block. In early 1939 range examiners completed a detailed survey of 67,000

acres in the Plateau block, including J. Neils and other ownerships.

In this report were many range depletion indictments which were typical of any that might have been made in any area before timber cutting practices were fitted to good forestry and before state slash disposal requirements had been scaled down to promote preservation rather than destruction of young timber growth and forage crops.

"The list was long: earlier clear-cut logging and broadcast burning of slash; concentration of livestock in meadows; lack of adequate water development and poor salting plans, resulting in improper stock distribution; overgrazing through trespass because of lack of fences and other controls; abandonment of small farms; overgrazing fostered by a leasing system based on a flat rate per acre, without control as to the number of stock per acre; bedding of sheep more than one night in one place; close herding of sheep; salting near water sources," summarizes Rathert.

Local custom sanctioned "open range" grazing by stock without number or seasonal control. Stockmen could run livestock on unfenced property because there was no state herd law. The fencing of private range wasn't tolerated by livestock men as a group. Many areas were grazed by both sheep and cattle several times in a season because lessees were not protected from trespass by adjacent lessees' livestock.

Cattlemen could lease a waterhole and graze the surrounding country from this "home" unit. Most grazing started in March before the beginning of spring growth. Forage plants were either trampled or pulled out. Extreme intermingling of ownerships complicated trespass control.

Mismanagement had depleted 85 percent of the range's vegetative types, with another 12 percent in still poorer condition. Carrying capacity averaged about 14 acres for a sheep season or 70 acres a cow season. The browse-shrub type comprised 19 percent of the range and coniferous timber 64 percent, the latter mostly an overstory of Douglas-fir remaining from the pine logging of previous years.

To cure these range ailments, it was recommended that actual carrying or "eating" capacity of the land be used as a basis for livestock use, with reductions to be made after mutual discussions. Conversion of the leasing system to a per head basis also was suggested, with a rate adjustment producing approximately the same annual grazing revenue.

Other proposals included: setting of opening and closing dates; use of range mostly for sheep; spring, summer and fall use, with special attention to be given in the spring to range readiness; better stock distribution through proper salting, fencing and water development; use of a range rider to patrol fences, count, stock, check trespass, carry out salting plans and break up cattle con-

centrations; reseeding of overgrazed meadows.

This spelled new opportunity for the land!

Company officials and Soil Conservation Service technicians explained the range improvement plan at community meetings held with local permittees. Emphasis was placed on the expected build-up in range carrying capacity. Permittees were convinced that their ultimate welfare was in controlled grazing.

As a result, cooperative land-use agreements were worked out between J. Neils as landowner, the permittees as operators and the Department of Agriculture as technical agency.

The plans called for many physical improvements. These included development of water sources, construction of drift fences and cattle guards, and establishment of range enclosure plots to study range recovery.

Permittees and the company paid for fence posts, fencing, cement water troughs, cattle guards and construction material. Some labor assistance was received from a Soil Conservation CCC camp. Technical supervision was provided by company and Service men.

Copies of the grazing plans were furnished to the company and permittees. Each included soils and range-type maps, with grazing units blocked out by seasons and carrying capacities. Grazing practices were itemized.

A restricted grazing season of 4½ to 5 months was provided. Spring turnouts were to be gauged by vegetative readiness, ordinarily in late May or early June, instead of March.

In 1940 the Underwood Soil Conservation District was organized by ranchers to carry on conservation work started in the country. War-time years slowed down the physical improvements that were planned and also resulted in a shortage of manpower for adequate follow-up and maintenance work.

But today the accomplishment record is impressive; something new has been added to the pine lands!

According to General Manager Rathert, the range improvement program has been carried forward intensively. Physical improvements now include 45 miles of drift fence, enclosing 14,000 acres of managed range lands; 19 developed water sources; five cattle guards; three test plots; and a range rider's cabin on the Plateau block and grazing area.

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This lush bit of meadow was once scoured out under unregulated use. Recovery has been result of proper stocking and rotation grazing



A Forester is First a Man

IT IS no soft snap to write a sketch on Walter Fraser McCulloch, Ed.D., in the style to which I am accustomed. It is true that I have observed his holding down the hot seat of a fire camp boss on the Tillamook Burn and, as an Oregon assistant state forester, wagging a mean thumb under the red nose and glary eyes of a robust woods boss who was slack in his slash burning.

But here we have a philosopher of education who has earned national note in his 14 years as Professor of Forest Management and Student Counselor in the School of Forestry, Oregon State College. His program of teaching forestry to make whole men as the first responsibility in his field, with citizenship the second consideration, and technical training in third place, has been published from Montreal to Macon and on around the map. His philosophy of student counseling, job-placement and follow-up has been of influence in the other institutions of technical training. "Mac," as he is called by even the freshmen forestry students at O.S.C., has well earned his fame as a forester of men.

This scribe with bark on is no hand to write up philosophies of

By JAMES STEVENS

education and the oracles thereof. But there are a few things of interest about Mac of Corvallis that I might be able to tell. A look around his office walls is a help in visualizing him. Hung there is a statement of the aims of the O.S.C. School of Forestry—the development of men, citizens, and technicians, *in that order*. There are paintings and photographs of trees, a mounted section of rail from the old Rio Grande Southern, a view of the Canadian Rockies, a number plate (2726) salvaged from an old-time Erie Railroad engine which Mac fired off and on over four and one-half years. And there are the books and things of a writing man, for he even turns out poems.

The keynote of the McCulloch philosophy of forestry education is also stated in the title of a paper

published in the September 1952, *Journal of Forestry*—"A Forester Is First a Man." It is a clear, concise and eloquent development of his basic theme: technical competence is not enough for the forester. He continues:

"Personal competence is something else again. In general, the reasons for unsatisfactory progress, dismissal, or discontent seem to arise out of personal inadequacy. On this evidence the School of Forestry (Oregon State College) has restated its aims and revised its program. Its purpose now is to assist the self-development of its men as individuals, citizens, and technicians, *in that order*. There is no virtue in graduating a straight-A scholar so mal-adjusted socially that he cannot hold a job."

And so runs the mainline theme of Dr. McCulloch's 135-page treatise, *Forest Management Education in Oregon*, published by the Oregon

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"Mac" McCulloch, builder of men, firmly believes that they should develop as individuals, citizens, and technicians—in that order

Despite all modern technology, the elephant is still the most efficient machine for logging in jungle



THE oozies sitting atop their elephants as they dragged teak logs through the Burmese jungles certainly never heard of the Confederate *Merrimac*, far away on the other side of the world. But shortly after this wooden ship draped with iron plates met and destroyed a good part of the Union Navy at Hampton Roads, Virginia, on March 8, 1862, teak took on a new importance all over the world. The *Merrimac* and the Union *Monitor*, which showed up a few hours later, were the first two "ironclads" to be tested decisively, and it was immediately evident that all-wood warships were out of date.

However, other problems came up very soon, for builders discovered that when armor plating was bolted to oak or other timbers, the steel plates rusted badly. There was only one commercial wood which had no effect on armor plate and, in fact, kept it from rusting where it touched it, and that was teak, a naturally oily wood found in India, Ceylon, Java, and chiefly, Burma. Teak thus made a perfect backing on which to fasten

armor plates. This wood also repels termites, resists fire to a surprising degree, and when used for decking stands up perfectly for years even when exposed to salt water, scorching suns, freezing weather and rough usage. Further, it does not splinter, and so is preferred by seamen washing decks in their bare feet. For years before this, teak had also been in great demand for the outside planking of ships, and was the only timber which Lloyds of London would insure for 16 years for this use.

But now the navies of the world, all rapidly covering themselves with heavy steel or wrought-iron plates, needed vast quantities of teak. Even as late as 1891 the Royal Sovereign Class of warships laid down for the British Navy specified four-inch thick teak planks, not only for backing for 18-inch armor plate, but also as sheathing on the *outside*, as protection for the armor plating! It is reported that a battleship required about 500,000 feet of teak, which continued to be used for the purpose of backing armor plate until the early 1900's.

The teak tree (*Tectona grandis* of the Verbenaceae family) is often 80 to 100 feet tall, and at the age of 150 years is about eight feet in circumference. The wood is a rich golden brown when first cut, but turns much darker with time. However, it never reaches the jet black of the elaborately carved pieces of Chinese teak found in many old New England houses, which were brought in by windjammer captains a hundred or more years ago. This jet black is achieved with enamel.

While teak is easily worked, and is hard and strong, with a straight grain, mineral deposits in the wood will soon dull any working tool. If properly seasoned it will not split or warp. When first cut it is sticky and oily to the touch, and has an aromatic fragrance—which it keeps to a great age. The teak tree has small white flowers in season, and its leaves, which are often 15 inches long, are so rough the Burmese use them as sandpaper; they also yield a red dye which is useful.

Most of our teak (which has been imported since about 1870, when it was in demand by the Navy) comes



FAMOUS FORESTS

Teak wood, harvested the hard way in steaming Burmese jungles, played a key role in naval history of the world

By CREIGHTON PEET

from Burma. At present, however, very little is arriving, because during the war the Japanese occupied Burma and destroyed not only vast warehouses, but many of the saw-mills, so that the industry is only beginning to operate again. Another difficulty, which has kept the price of teak high, is the high price of elephants today. Despite all our modern technology, the elephant is still the most efficient machine discovered for pulling the heavy teak logs out of the deep mud and underbrush of the jungle. Many years ago a good, well-trained elephant sold for \$500, but today a 12-foot animal is worth around \$2500, and even an untrained elephant is worth \$1200.

Teak grows in mixed deciduous forests, usually with much bamboo, and often on steep mountainsides at altitudes of from two to three thousand feet. There are no roads—dragging paths are cut out just before they are used, and dynamite is employed to remove big boulders. The rainfall is often up to 190 inches a year, monkeys, tigers, leopards, scorpions, 30-foot pythons, wild hogs and other fauna make life difficult—and

the heat is often intense. Often mud is knee-deep, especially after the elephants have passed by, churning up the muck.

At one time there were as many as 6000 elephants and 6000 water buffaloes working teak in Burma, and since the elephants are so important in lumbering in this country, caring for

these animals and keeping them healthy is a major problem.

The elephant is a hard-working character, and amazingly intelligent. He doesn't kill himself. Chained to a 29-foot log and ploughing along through terrain filled with mud, stumps, and rocks, he pulls about three log-lengths, and then pauses for breath, often snatching up a bamboo shoot to chew on, much as you or I might pick up a straw. His judgment in pulling, nudging and lifting logs as they are moved over and around obstacles is astonishing. Often logs are taken to the edge of a cliff and allowed to roll down several hundred feet, to simplify transportation. However, the elephant, harnessed to a heavy log, is very careful about this. He will stop short of the edge by a good many feet until the log is unchained. Then he will deliberately go around behind the log and push it carefully over the edge. No fool, he isn't going to get so near that a heavy log will drag him over the edge.

In his book, "Elephant Bill" (Lon-

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A pleased-looking Paul Bunyan watches part of the pageant file by

The Magic Tree

Five hundred school children take part in the annual Mason County Forest Festival, pride of the forest industry community of Shelton, Washington

Fog fairies and raindrops fetch fond smiles from packed grandstand





Forester Charles S. Cowan receives a royal accolade



Queen is crowned by Father Fir of Evergreen Forest

EARLY each spring in the thriving forest industry community of Shelton, Washington, public school teachers and students turn—with due regard for curriculum requirements—to a forestry “fun-lest” program as their part in the annual Mason County Forest Festival. It takes the form of an outdoor pageant on the basic subject of “The Magic Tree.” A new theme is developed every spring, however, in the prepared script. Last year it was

on a century of forest-industry progress at Shelton.

The 1954 “Magic Tree” pageant theme was woven around a symbol of forestry familiar to Puget Sounders for many years—the original forest fire lookout of the Simpson Logging Company, producer on the land since 1888. About 500 pupils of the Shelton schools, from the fifth through the ninth grades, donned home-made costumes, in parts ranging from polecats to princesses, and

carried through 100 minutes of pageantry on a stage 130 feet wide and with scenery hitting heights of 50 feet.

The stage was set on Loop Athletic Field, as it has been in all previous pageants since 1946. The grandstand and outside benches hold 5000. The pageant plays to capacity audiences on two nights every spring. The dates always range somewhere in mid-May, Thursdays and Fridays, with Saturday given to the Mammoth Morning Parade and the Afternoon Loggers’ Sports Show of the Mason County Forest Festival. Shelton has around 5500 population. The pageant draws more than 10,000 on its two nights. For the regionally famed Saturday parade 30,000 viewers have been claimed.

The Shelton show surely does “pack them in” for two nights and the big holiday. Old Jupiter Pluvius commonly does heavy spring work on the land of the South Olympic Mountains and the Big Skookum arm of Puget Sound. It is all to make the trees grow. But year after year the old soaker does keep his buckets stowed at Mason County Forest Festival time, except for a rare shower now and then. Jupe seems to like to join Paul Bunyan in the fun.

Little “Indians” paddle their own canoe



ABOUT this time of year, in almost every household across the land, there begins a debate that for intensity—but we hope not invective—sometimes rivals even the great verbal battles raging on Capitol Hill. Carried on without benefit of TV, but complete nevertheless with “points of order,” photographs (uncropped), maps and budget data, these family-level “hearings” have been called to settle a perennial, and very vital, domestic issue—where to spend this year’s vacation.

Individual tastes being what they are, a decision on this matter is not always easily reached. But once all the votes have been counted there’s a better than even chance that the average family will have agreed to spend at least part of its summer holiday in one of our national parks. Why? Because more and more people are finding out that these outdoor playgrounds operated by the National Park Service offer *something for everyone*, and at bargain prices.

Last year more than 17 million Americans enjoyed the dazzling scenery, the fishing, hiking, camping, water sports, horseback riding and in-

spirational wonders afforded by our 28 national parks, 26 of them in the continental U. S. This year, with more and more families getting “back to nature,” the number of parks visits may approach the 20-million mark, about five times what it was 20 years ago.

One reason the national parks figure so prominently in so many vacation plans is that they are located practically in the backyard of everybody. Very few U. S. families are more than 500 miles away from a major park. From the Acadia in Maine to the Zion in Utah are 12 million acres of outdoors that have been set aside for the use and enjoyment of the people, and when you’re on the highway the next park is just over the crest of the next hill.

Another very important advantage of a parks vacation is the comparatively low cost. The scenery is always for free, of course, and so are campsites for your own tent. Some parks have family housekeeping cabins where you can do your own cooking. These are operated under private concession at reasonable rates controlled by the National Park Service. You also can eat in inexpensive inns in many parks and

there are always places where you can rent fishing equipment, motorboats, horses and almost anything else you might need to make your stay more enjoyable. No park now charges more than three dollars for your car and passengers for a 15-day period and some charge less. In fact you can stay the whole season by paying just double the 15-day charge. If you have a trailer, that’s usually one dollar extra.

As to variety, Freeman Tilden summed it up very well in his new book, *The National Parks*, when he said “There is something for every taste in the great cluster of park jewels. What will you have?” The following brief description of the national parks in the U. S. and their locations may help you to make up your mind.

Arizona (Grand Canyon): How many hundreds of millions of years were consumed in nature’s making of this tremendous spectacle, science cannot tell, but the Grand Canyon is truly one of the natural wonders of the world. The Canyon itself is cut into basic granite by the Colorado River, is 217 miles long and from four to 18 miles wide. In one place the river is more than 6000



The Great American Playtime

When it comes to vacations, the national parks figure prominently in the plans of a great many families. The reason: they offer something for everyone—at bargain prices

feet below the Canyon's rim. No other national park, perhaps no other area in the world, contains so wide and varied an exhibit — an amazing stretch of form, size and glowing color. Its floral gamut reaches from the splendid spruce stands of the north rim, through the south rim's semi-arid forests of yellow pine, pinyon and juniper, down the rapid gradations of cliff and talus vegetation to the desert climax of the depths.

Arkansas (Hot Springs): Famed Hot Springs is the nation's national spa. Entirely different in character from our other great scenic parks, it includes besides Hot Springs, North, West and Sugar Loaf Mountains. Millions of gallons of medicinal waters pour from the 47 springs in the area. Bathhouses provide approved modern water therapy, with a physician's advice recommended but not compulsory. There are many hotels, some of them as luxurious as any in the country.

California (Kings Canyon): The canyon of the Kings River is an extraordinarily fine scenic exhibit. Its granite gorges, glacial lakes, virgin forests, flowering meadows and trout-filled streams, adjoining Sequoia National Park, lie across the heart and down the western slopes of the Sierra Nevada Range. Two peaks more than 14,000 feet high, and many others more than 13,000 feet, dominate the canyon. This is an ideal campers' area because of the long, almost rainless summers. There are more than 300 miles of trails for hiking or horseback riding.

(Lassen Volcanic): In the northern part of California, the southern end of the volcanic Cascade Range somewhat overlaps the northern end of the granite Sierra. Here rises Lassen Peak for which the park is named. America's only recently (1914-21) active volcano, Lassen Peak is regarded as perhaps the dying gasps of the volcanic energy of the Cascades. Some of the park's outstanding features are striking examples of volcanic violence, pink lava crags, hot springs and steam and sulphurous vents. The park also boasts beautiful forests and hundreds of wild flowers especially brilliant until late in September. Saddle and pack horses are available. The Park Service recommends that reservations be made from June 20 to September 10.

(Sequoia): The Sierra forest finds its highest expression in the Sequoia National Park. Here are magnificent trees of mighty girth and great

height, including the General Sherman, an immense redwood estimated to be 3500 years old, possibly the oldest living thing on the face of the earth. Besides the General Sherman and other tree monarchs, there are lush forests, rushing rivers and creeks, valleys hewn by glaciers, mountains crowned with snow and sheer precipices. This also is the domain of Mt. Whitney, the highest in the country. The beautiful lakes are well stocked with trout and there are

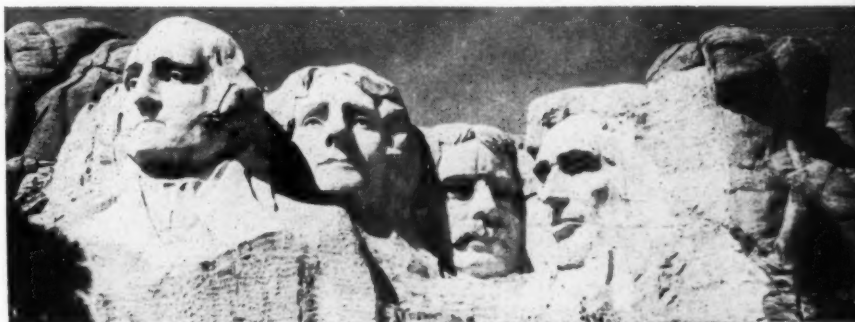
an adequate number of good campsites.

(Yosemite): Named by the Indians after the grizzly bear which to them was king of the wilderness, Yosemite is a land of unmatched beauty. Its deep canyons, towering cliffs and inspiring back country include majestic waterfalls, three groves of giant sequoias and a great variety of plant and animal life. Yosemite Valley is a magnificent gorge renowned for Half Dome, El Capitan and other



Delegates to AFA's annual meeting Sept. 6-9 in Portland, Ore. will have ready access to many of our great western parks

Mt. Rushmore in South Dakota is one example of the scenic wonder that can be seen both inside and outside the parks



lofty peaks. Yosemite Falls, dropping almost half a mile to the valley floor, is an awe-inspiring sight. The best time to visit Yosemite is while the winter snows are still melting. There are campgrounds, good fishing and High Sierra camp trips.

Colorado (*Mesa Verde*): Once home of the cliff dwellers, the great green mesa that rises above the Mancos Valley gives the visitor a fascinating insight into prehistoric America. The park, which includes most but not all of the land on the green mesa, is located in the southwestern corner of Colorado. It is not far from the only place in the United States where four states come together—the point where Arizona, Utah, New Mexico and Colorado meet. Established in 1906, Mesa Verde Park preserves significant ruins of hundreds of Indian cliff and cave dwellings. Free campgrounds are available, as well as guided tours of the outstanding ruins, and it is possible to purchase woven, silver and other craft items made by the modern southwest Indians of the area.

(Rocky Mountain): Of the three national parks located on the backbone of the continent, which is the Rocky Mountain System, only one, Rocky Mountain National Park, represents its prevailing characteristics. In this park the explorer of the summits finds a never-ending variety of spectacles and emotions. From Specimen Mountain to the north, the haunt of mountain sheep, the Continental Divide southward piles climax upon climax. Just 68 miles northwest of Denver, the park is a wildlife sanctuary for American elk, black bears and other animals. The park includes about 700 species of flowering plants. Campsites are plentiful and among the more popular activities here are motoring, horseback riding and hiking.

Florida (*Everglades*): A unique national park in that it is America's largest remaining sub-tropical wilderness. A veritable wonderland of flora and fauna, the park delights visitors with its red-and-pink spoonbills, alligators and exotic plants that seem to belong to another world. You'll find good fishing here, but don't venture into the trackless water wilderness or the open Everglades without a competent guide. This area can be dangerous for someone who doesn't know his way around. Of interest to most visitors are the Seminole Indian villages and craft shops nearby. Plenty of trailer courts compensate here for the lack of campsites.



Wind-rippled aspens line the roads that follow the shore of Jackson Lake in the Grand Teton National Park area in Wyoming

Kentucky (*Mammoth Cave*): A visitor once said that going from any other cave to Mammoth Cave is "like going from a log cabin to a palace." Indeed, with its 175 miles of charted passageways, the cave is an awe-inspiring place. There are five different levels to the cave, the lowest of which is 360 feet underground. On several of these levels are the many high domes and deep pits and the beautiful stone formations for which the cave has been so famous for a century and a half. There are also eight waterfalls in the cave, three rivers, two lakes and one strange body of water known as the Dead Sea. For a real thrill try eating a meal at the cave's Snowball Dining Room — 267 feet below ground.

Maine (*Acadia*): Like all national parks there is a great deal to see and

do in Acadia. There is fishing, in the lakes as well as in the ocean, and swimming or sailing for all those who like water. There are trips about the island, lectures, and campfire programs provided by the Park Service. Then, too, there is a fine museum where remains from the early Indian life of the island are kept. But above all, perhaps, is the general air of enchantment that pervades this combined attraction of sea, mountain, forest, valley and lake—all of nature's best. You can plan on plenty of good campsites.

Michigan (*Isle Royale*): This forested island, the largest in Lake Superior, features one of the largest moose herds in America. No hunting is permitted, but there's excellent fishing for brook trout, perch and pickerel. The island has a rugged coast line, picturesque crags and

ridges, dense growths of hardwoods and coniferous trees and a carpeting of wild flowers. Trails, campgrounds and tourist cabins have been constructed for the benefit of visitors. Since this is a true wilderness area, there are no roads. No automobiles or saddle horses are allowed on the island. Travel is by foot or boat only.

Montana (Glacier): Perhaps the greatest single difference between Glacier and all other scenic regions lies in the shaping of its rocks. Here can be found precipices four and five thousand feet high, enormous canyons once the channels of glaciers, thousands of streams, hundreds of lakes—a most extraordinary multiplicity and richness of scenic phenomena. There is abundant wildlife — deer, elk, moose, mountain goat and beaver. Too, you'll find 1000 species of flowering plants at season's height in early July and the fishing in McDonald Lake, the park's largest, is incomparable. Almost all sections of the area are penetrated by horse and foot trails.

New Mexico (Carlsbad Cavern): This is the largest underground labyrinth yet discovered. Stretching beneath the Guadalupe Mountains, the connected caves that make up the cavern are of unusual magnificence. They were formed by untold years of dripping water. First discovered in 1901 by a cowboy named Jim White, they since have been visited by hundreds of thousands of Americans. A sight that has fascinated many visitors to this natural wonder is the nightly exodus of millions of bats through the great entrance arch of the cavern for a night of foraging. The accommodations here are good and the guided tours are well conducted.

Oregon (Crater Lake): Crater Lake has been described as a mountain that swallowed itself. Actually, it is a deep blue liquid gem cradled in the huge hole formed when an ancient volcano's peak collapsed. One of the world's strangest bodies of water, it is encircled by multi-colored lava walls up to 2000 feet high. Perhaps the most unusual thing about the lake itself is its lovely coloring. In perhaps no other lake is the depth of color and brilliance of blue so striking. There are innumerable mountain trails leading to high points about the rim of the lake. You will also find abundant small game and about 115 species of birds.

Oklahoma (Platt): Like the Hot

Springs National Park in Arkansas, the Platt National Park in southern Oklahoma was set aside for public use because of its mineral springs. The park lies among some gently rolling hills just outside the little town of Sulphur, Oklahoma. The smallest of our national parks, this well-wooded area is traversed by picturesque streams with many springs, small waterfalls and cascades. Although the sulphur and bromide springs are popular, the waters should be taken extensively only on advice of a physician. There are free campgrounds.

South Dakota (Wind Cave): This 28,000-acre region in the scenic Black Hills is noted for its limestone caverns decorated by beautiful crystal formations, many in strange honeycomb formations. There are hundreds of different chambers in Wind Cave, and each is so different in appearance as to excite the wonder of all who see them. In addition to the cave, this section of South Dakota features wild herds of buffalo, deer, elk and antelope.

Tennessee (Great Smoky Mountains): This, America's most-visited national park, is connected with Virginia's Shenandoah National Park by the Blue Ridge Parkway, one of the most beautiful parkways in the world. The park is named for the blue haze, sometimes dense as smoke, which almost always hangs over the mountain crests. In this great park

you can roam afoot or on horseback over more than 200,000 acres of virgin forest with 130 varieties of native trees. Trout fishing is also good, but for this you'll need a North Carolina or Tennessee license.

Texas (Big Bend): This is a wild, rugged region of spectacular mountain scenery. One of our newest national parks, established in 1944, this area features wildlife more typical of Mexico than of most U. S. regions. Accommodations are limited at Big Bend, so early reservations are a good idea.

Utah (Bryce Canyon): Here, painted in unforgettable colors, is a sight that defies description. The first glimpse of this fantastic canyon is something the visitor will never forget. One viewer saw Bryce Canyon as "a great bowl of lace and filigree work in stone, colored with the white of frost and the pinks of glowing embers." Perhaps that is as good a description as any for this strange land of pinnacles, walls and spires shaped by millions of years of erosion. Trails are easily traveled, horseback facilities are unusually good and there are plenty of guided circle tours.

(Zion): Ablaze with color and readily accessible for observation, Zion is perhaps the country's best-known example of a deep, narrow, vertically-walled chasm. This area has a wide variety of wildlife and

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Placid and beautiful, lakes like this one make visits to the national parks of Oregon and Washington inspirational experiences





THEY'RE BANKING ON

By D. DOOLEY DAWSON

SOME nine years ago, Mr. C. M. Malone, vice chairman of the Board of The Second National Bank of Houston, observed that business and industry had more at stake in agriculture than most people realized. He awoke to the fact that the bankers should take the lead in getting people in all walks of life, young and old, regardless of how far removed they were from the land, interested in conservation of our natural resources.

The importance of the soil, water and timber to the present generation, as well as to future generations, was nothing new to Mr. Malone because he had grown up on a black land farm in central Texas and had seen with his own eyes what soil erosion had done to destroy the land he farmed as a boy; also, what it means to continuous crop, overgraze pasture lands, burn and overcut timber lands, and what good running springs, creeks and rivers mean to the communities across the big state of Texas.

With this background and being one who had kept in close touch with the development of agriculture resources of Texas to the extent of being in charge of a large development in opening the Rio Grande Valley of Texas, he realized the agricultural needs of the state. He had no trouble selling his Board of Directors on the idea of the bankers' position in the overall picture of conservation of our natural resources. His bank launched a program supported by the Board of Directors and officers of The Second National Bank of Houston, that not only interested the bankers and businessmen of Texas but included the farmers and ranchers as well, and also the businessmen and industry throughout the Southwest.

This may sound easy, but to begin with, the bankers and businessmen of the local towns in Texas had to be sold on this new approach of becoming active, to the extent that they were willing to give some of their time and money assisting local

agricultural agencies and farmer organizations in working out, and carrying on, worthwhile programs needed in their areas. Through local bankers, Chamber of Commerce managers and county agents, Mr. Malone arranged to hold night meetings sponsored by these organizations, inviting local businessmen, farmers, bankers and their wives from adjoining counties to attend. A free barbecue dinner, with all the trimmings, was furnished by The Second National Bank of Houston. These meetings, attended by thousands of farmers and businessmen, were conducted over a period of two years. During this time the bank also cooperated with several railroads in Texas, sponsoring special trains across the state, holding agricultural meetings along their lines where the speakers pointed out the necessity of business, industry, and farmers working together on a soil improvement program and the conservation of water and timber.

After two years of meetings of this



Texas bankers, traveling by special train, have done much to promote the principle that business, industry and farmers must work together to improve soil programs and to conserve water, timber and related resources

SOIL

type, the local bankers in the agricultural areas of Texas began to work out programs for their own areas with the assistance of the local agricultural agencies, farmer committees, and local Soil Conservation District supervisors, and asked The Second National Bank of Houston to cooperate with them in providing the services of Mr. Dooley Dawson, vice president and manager of the bank's Agricultural Department. Many bankers sponsor these meetings annually in their counties, timed to the season of the year when such practices as planning winter legumes, pasture improvement, livestock and dairy management are at hand. To hold these meetings over the entire county usually requires about five days. They are held in the rural schoolhouse, church, or community houses. The results of these meetings cannot be measured only by the number of acres of soil improving crops planted or the number of acres of improved pasture planted, or even the new practices adopted in

livestock and dairy management; there is something far more reaching; they get the farmers, businessmen, and agricultural agencies working together on a common objective. Local businessmen operating all types of business in local towns are asked to attend the meetings; included are doctors, lawyers, ministers, local newspapermen, and others, bringing about good relations between the townspeople and the farmers in the county.

A series of such meetings to encourage planting winter legumes for soil improvement were held in Cooke County which is located in the black land belt of Texas. As a result they were able to increase the winter legumes acreage from 39 to 90 thousand acres the following fall.

Talking conservation is good, but for end results, it must be applied to the land and fitted into crop rotation to make it pay dividends.

In 1918, The Second National Bank of Houston took over the Old China Grove Plantation (in Brazoria County a few miles south of Bonney, Texas) as payment on a note. The Plantation contains 1665 acres and a lot of early Texas history revolved around it. China Grove was the home of General Albert Sidney Johnston at one time the commander of the Texas army and later a Confederate hero; he was killed during the Civil War in the Battle of Shiloh.

In 1947, The Second National Bank of Houston decided to improve China Grove and make it pay its way. There were 400 acres of open cultivated lands, and about 350 of pasture land; the remaining acreage was in heavy timber. The small drains and turn rows in the cultivated fields had grown up in trees and brush, and about 90 percent of the pasture had grown up in Cherokee Roses—thanks to General Johnston who had set them along the fence rows to beautify the place.

After it had been cleared of the scattered brush and trees, the first step was to get the local soil conservation district to render engineering assistance in draining the cultivated field. Due to poor drainage, it was necessary to dig large ditches and change the row directions.

The pasture area also had to be cleared and drained, seed bed prepared, soil fertilized and seeded to adapted grasses and legumes. More than a year was required to get the complete program installed, but as a result, things began to happen. Yields of cotton and corn began to double,

and the 350 acres of pasture land during eight months of the year were carrying 250 head of mother cows as compared to only 100 previously carried. By 1950, a thousand pounds of white clover seed were harvested from 50 acres of the pasture and sold for 50c per pound.

In the fall of 1948, Mr. Dawson had the tenant plant and fertilize 20 acres of his cotton land to winter legumes; as a result, 34 bales of cotton were harvested from the 20 acres, and he averaged only one-half bale per acre on the remaining 200 acres of cotton. Because the tenant was hesitant to pay his part of the cost of planting the 20 acres of legumes, the bank bought the seed and fertilizer and gave to him. The following fall, Mr. Dawson waited to see the tenant's reaction to the yield of 34 bales of cotton to the 20 acres before approaching him again about planting winter legumes. Late in October, the tenant came to the bank to see Mr. Dawson, bringing the bill for seed and fertilizer for 180 acres of winter legumes; he asked if the bank would be willing to pay its one-fourth cost, adding "If you are not, it's to late because the peas are up and doing fine." Naturally, Mr. Dawson complimented the tenant and told him the bank would be glad to pay their part of the cost.

The farm has been paying from \$2000 to \$2500 per year for the bank's share of the crops but after installation of the conservation program, the bank's rental share of the crops averaged \$12,000 annually.

The local people began to take notice of what had been accomplished on China Grove Plantation, and it became a place that was pointed out by Soil Conservation District technicians and county agents as an example of what could be done in the Gulf Coast Area of Texas by practicing conservation and soil management.

The services of the Agricultural Department of The Second National Bank of Houston are available to anyone interested in hearing about conservation of soil, water and timber and in doing something about it.

The bank is the storehouse of the communities' wealth in dollars; the soil is the storehouse of the real wealth of the community, and the treatment the soil receives in the trade territories of all the communities in the United States not only will determine the longevity of each individual community but as they go, so goes the nation.



By H. H. CHAPMAN



Our National Forests, a

THE national forest system arose as a challenge to the uncontrolled forces of commercialism in the lumber industry, which during the 19th and the first quarter of the 20th century swept through the forests of the Lake States and the South, with a ruthless disregard of any interest except to produce lumber and survive, as private enterprise. While doing so, lip service was rendered to those well meaning enthusiasts, members of The American Forestry Association, who were talking about forest conservation. But all lumbermen knew that fire and taxes put any such ideas in the realm of fantasy, and anyway, it took too long to grow a tree. In Europe, perhaps—but "European conditions do not fit America, and European forestry is impractical here."

This impasse might have continued indefinitely, had not the public interest been channeled into the

effort to "preserve" at least some of the primeval forests, through national initiative. The government still owned vast areas of forest land throughout the west, principally because the mountainous topography made it impossible at that time to reach and cut them, and the pioneer lumbermen in this vast region, especially in the Northwest, were already carrying a load of undigested timber which later forced some prominent firms into bankruptcy just in paying the taxes and interest, while overcapitalization and overproduction of lumber, in an effort to liquidate and lighten the load, further added to their difficulties.

Just at this time, the agitation stirred up by American forestry leaders bore fruit in the action of Congress, in 1891, and Presidents Harrison and Cleveland proclaimed the reservation of the first "forest reserves." The purpose of these ini-

tial reservations was practically identical with that which actuated the creation of the national parks. Timber "stealing" was to stop. Sheep and cattle were thrown off these sacred areas. Mining was anathema. All this is true today of the national park system, for that is what the public wants in these parks—nature unspoiled by man.

But something happened that entirely changed the course of events with respect to the national forests. This catalyst or enzyme was what the European nations had come to recognize as the science of forestry, whose practitioners constituted a new profession and were known as *foresters*—not game keepers, not lumberjacks, but men trained with the same thoroughness in sciences and technical arts as engineers, or biologists, and with a vision for the future which reached beyond the immediate profit motive of clearcut-



Photo by Leland J. Prater, USFS

ts, and What They Mean to Us

ting and sought practical means for perpetuating the forest as a permanent, not a vanishing, asset.

The quantity of an enzyme may be small but its effect is revolutionary. To this new element is due that transformation of the national forests from "park" status of museum-like preservation to a vital pulsing entity in our national economy, managed, in the immortal words of Secretary of Agriculture James Wilson, *for the greatest good of the greatest number in the long run.*

Three foresters, with those whom they influenced, were the germinating points of this change: Bernard E. Fernow, first professionally trained forester to head the Division of Forestry in the Department of Agriculture, Gifford Pinchot, who succeeded him there, and Filibert Roth, the first forester to be employed in the Department of the Interior. Henry S. Graves, Pinchot's assistant, and C.

Alvin Schenck, played conspicuous parts. For there were two great tasks to be performed. First in importance was the creation of the tools with which to work—the education and training of a body of young men in the profession of forestry as applied to conditions in America, men who could by practical measures turn the tide of careless or ruthless destruction—men whose professional training was to *grow trees*, as well as to cut and use them.

So Fernow himself founded the first professional four-year undergraduate forestry school at Cornell in 1897, Schenck started a private school at Biltmore, North Carolina, in 1898, Graves, with an endowment from Pinchot, initiated the Yale School of Forestry in 1900, and Roth put professional forestry on the map at Ann Arbor, Michigan, in 1903 after a term at Cornell. Other institutions soon followed, at Penn

State, Minnesota, Oregon, Washington, California, and later, in the South. A profession was born, founded on the tradition of service as truly as was that of medicine, law, or any other of the great modern organizations of men trained for technical services. Now, in the year 1954, this profession numbers over 15,000 practicing foresters and 25 schools whose graduates are trained in every phase of the management of forest lands, the production of crops of trees, their protection from fire, insects, diseases and climatic hazards, and their utilization for the hundreds of different products which help to give this country a strong and enduring economy and a standard of living excelling all other nations.

The second great task facing these few pioneers in forestry was to get it practiced in the woods. It was here that the national forest system played its great role. As contrasted with the

still powerful and virile sentiment for absolute preservation in a primitive condition, these leaders substituted, for the *national forests*, the broader principle of *multiple use*, for in no other way could they remain faithful to their goal, as defined by Secretary Wilson.

In 1897, the efforts of Fernow, Pinchot and others bore fruit in Congress, and the national forests ceased to be mere forest reserves. From then on they were to play their full part in the economic life of the nation, by utilizing *all* their natural resources, *renewing* by scientific methods those capable of reproduction, the trees, shrubs and grasses, wildlife and water, and endeavoring to prevent waste of nonrenewable minerals and soil.

Every legitimate use by private business enterprise was to be permitted, but regulated to put an end, if possible, to destructive practices caused by ignorance, greed, and self interest. Within this framework, the controlling principle was maximum benefit to the whole people, to the nation. Wherever this interest was threatened, the offending parties must be brought into line.

The most outstanding and vital distinction between national parks and national forests lies in with the very essence of forestry. For instead of a hands-off policy, permitting nature, untrammelled, to produce trees that reach maximum sizes and ages and then perish from any one of numerous natural causes, forestry imposes an orderly regime on the forests, similar to that of agriculture, by which the trees are grown as crops. This means that management largely determines when, how, and of what species the forest shall be reproduced in seedlings and when, how and to what extent the crops of trees shall be harvested.

The idea of deliberately cutting down trees is alien to the philosophy of park conservation. One direct result of this vital decision by foresters that the national forests were intended for *use*, was to create a sharp division between advocates of conservation *without*, and *through*, use. National parks, through pressure of the former group, have in instances been extended to include great areas of virgin forest, far in excess of its value or necessity if confined solely to recreation. On the other hand, those areas within the national forests that appear to be of greater value for scenic solitude have been set aside, and commercial uses restricted or excluded, in order to pre-

serve this heritage for the enjoyment of our descendants. These wilderness areas cover over 14,000,000 acres, including the roadless area within the Superior National Forest in Minnesota, a canoe country unexcelled except in the vast reaches of Canada.

But on the entire remainder of the national forest areas, except those portions on which grass and browse are predominant, timber growing and harvesting is the chief concern of the government's foresters. However, much of this land is above timber line, and another large portion lies too low and is too dry for trees. Again, the ruggedness of the topography precludes logging on other large areas until costly access roads are built with funds provided by Congress.

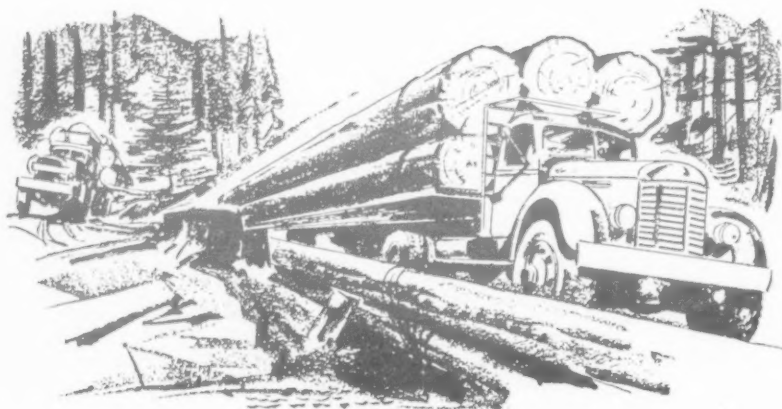
The timber crop in the western national forests varies from the dense, tall and huge stands of Douglasfir, cedar, Sitka spruce and hemlock in the Northwest, through the valuable western white pine of Idaho, to the great areas of drier lands growing western yellow (ponderosa) pine, and down to the desert fringes of pinyon pine, juniper, and chaparral, while above the main timber belt lie "grand" and "noble" firs, much lodgepole pine, brush, and alpine meadows. In the Sierras the forest contains remnants of the giant sequoia, in a mixed stand associated with sugar pine, incensecedar, whitefir, and yellow pine.

The national forests purchased by federal funds in the eastern states since 1911, contain portions of every forest type to be found in this vast region, from spruce and northern hardwoods to the longleaf and slash pines of the extreme South. Most of this acquired land had been cutover before it was sold to the government.

It now totals over 14 million acres, and is located in 11 southern and 9 northern states east of the Great Plains. Throughout the entire area of these widely varied national forests, the policies and purposes of the Forest Service are to harvest the crops of timber up to the full capacity of the forests, to reproduce them in the most valuable species, and by so regulating the cut, to maintain the forest economy of regions dependent on the national forests for raw materials.

The Forest Service never adopted the idea of cutting and manufacturing its own timber. It held, wisely, that private industry was better qualified for this job. The Department of the Interior in 1897 was authorized to sell timber, but after the transfer to Agriculture in 1905, the technical forestry staff worked out procedures, based on sound economic principles, by which prices for standing timber, sold on the stump, could be determined on the basis of giving the purchaser a profit sufficient to compensate him for risk and management, and yet retain by the government an adequate "stumpage value." Under this procedure, mills with an annual cut of 20 to 40 million board feet have found it possible to operate on government lumber, without owning an acre of forest land. Long-term contracts embracing over 400 million board feet have been negotiated, and finally, through a federal act, it is possible to set up a sustained-yield cooperative contract under which private and public timber are pooled, to insure a permanent operation and a stable community.

At the same time, great numbers of small operators are able to buy stumpage and conduct their business on national forest timber. The extent





of these sales, large and small, in the last fiscal year, amounted to 5160 million board feet, or about one-eighth of the entire output of the country, and the public revenue derived was \$70,616,025, from 22,020 operations.

What does this mean to the wood-using industries, lumber, paper, veneer, and all the others? It signifies that for 12½ percent of their entire supply of raw materials they are relieved of the burden of taxes (the national forests more than pay their way), fire protection, insect depredations, much of the cost of road building (ten percent of receipts is devoted to forest roads and trails), and of the entire responsibility of practicing sound forest management and securing reproduction and replacement of their basic resource. The industry steps in when the crop is ready for cutting, and pays only for what it gets. Losses of standing timber from any of the numerous sources are borne by the government as owner.

In addition to the assumption of all costs on national forest lands the government grants, for the support of the local schools and roads, 25 percent of the gross income from its forests. Despite these facts, local governments argue that if the lands were privately owned, the taxes they could levy and collect would exceed these sums, and urge that grants be based on ad valorem taxes instead, or that the lands be sold to private parties, in order to increase the tax yield.

The only restriction on private enterprise in the use of national forests is the limitation of the amounts sold to the capacity of the area for permanent yields, and to the trees marked or designated for cutting. These measures are identical with those adopted in the now num-

erous instances where private companies have gone into the business of growing their own timber on the basis of a perpetual yield.

As to the still greater areas owned and operated by companies and individuals who have not adopted such policies, the federal management assures the public that at least one-eighth of their supplies come from lands not damaged by destructive methods of cutting.

The growing, harvesting, and reproduction of forest trees is a science as exacting as agriculture and has many similarities. It is the business of professional foresters to know their trade and to seek the application of sound methods, whether these men are employed by federal, state, or private owners. The principles of successful silvicultural practice do not differ with the ownership of the land. Differences in methods of cutting merely produce different results, some successful in perpetuating the forest, others in the highest degree destructive and harmful, both to public interests and to the long range benefits of the landowner. No single rule of cutting will work everywhere. Those mistaken individuals who have espoused the cause of universal "selective cutting," which means the removal of only a portion of the stand and leaving the remainder, may be admired for their zeal but not for their practical, technical knowledge or ability. In the Douglasfir forests of the Northwest, "selective" cutting, given a thorough test on the national forests, was a flat failure, the species did not reproduce itself, and losses in partially cut stands greatly exceeded growth. Based on this experience, the system universally adopted by both public and private owners is clearcutting in patches, with blocks left for seed production. This is a good example of a professional achievement in disregard of an untenable theory.

A second and revolutionary change in practice resulted from the study of the relationship of ground fires to the establishment and survival of reproduction of longleaf pine in the South. It was demonstrated by actual practice that the successful growing of these seedlings required the burning over of the land at intervals of three years, to kill back hardwood sprouts and disinfect the seedlings from an insidious needle disease. Nature had provided these seedlings with means to survive such winter fires, but they were helpless against shade or disease unless their ally, fire, came to their rescue. This was a

puzzle for trained foresters to solve; and it was done. Many other examples could be cited, of the great range of problems confronting the professional foresters, in managing the bewildering array of forest species and types, no two of which act alike, each of which can be successfully reproduced and grown only by comprehending the means by which nature, in the past, has determined their survival, and if it is humanly possible, by adapting natural processes to fit man's need for crops of highest value to our economy. While much can be learned through mere close observation by men trained in basic forest sciences, the Forest Service does not leave these matters to chance. Regional experiment stations, one within reach of each of the nine great regions into which the



national forests are divided, are equipped with specially trained men whose business it is to plan and carry on methodical experiments covering a wide range of problems directly concerned with the growth of forest crops, and with the methods of cutting and techniques of logging. Finally, concentrated at Madison, Wisconsin in the Forest Products Laboratory, research deals with the utilization of wood in all forms of products. The Regional Experiment Stations are in turn supplemented by experimental forests, areas on which methods of management and silviculture are given practical tests. The contributions of these trained research staffs are of fundamental importance to the future of all forests, under any ownership.

In many regions of the arid western states, water exceeds all other resources in value. On most of these great areas there is no net run off except at higher elevations where timber grows, and these lie for the most part in the national forests. The soil on mountain slopes is not apt to be deep, and is held in place

only by vegetation, either trees, brush, or grass. When this cover is destroyed, erosion sets in, sometimes reaching catastrophic proportions. While trees form the most effective cover, the lesser vegetation if undisturbed does the work nearly as well. For this reason, partial removal of the timber does no damage to the soil and even increases the water yield by lessening the demand made by the trees for water. The great destroyer is, instead, overgrazing at the headwaters of the drainage basins. After the communities in the Wasatch basin of Utah had suffered huge losses from mud flows, it was found that all this damage originated in a few small privately-owned overgrazed patches of land. By acquiring these key areas and including them in the national forests, the menace was controlled. Wherever water is the primary resource, the foresters in charge of these areas give it first priority in management.

Another problem in multiple use lies in regulating the relations of big game, especially of deer and elk, to domestic stock, recreation, and water. Some new and important lessons had to be learned. Deer especially have a breeding potential, as a means of overcoming losses from natural predators, such as cougars and wolves, which suffices to maintain their numbers. But with the decimation of these predators through systematic hunting and poisoning, the number of deer released from this pressure, expanded at a geometric rate. Within a few short years, in many widely scattered regions, of which the outstanding example was the Kaibab National Forest in northern Arizona, the deer had so destroyed their natural browse forage by overgrazing, that nine-tenths of the herd perished of malnutrition and sheer starvation. The increase in elk, under prohibition of hunting, gave rise to the same problem, especially around Yellowstone Park. Surplus populations had to be controlled not only for their own health but to reduce excessive damages to tree reproduction, and to diminish the conflict with livestock. Nature was out of balance, man was responsible, and it was up to the Forest Service technicians to work out the compromise, which involved relations with state game commissions, for the game was state property. This is just one more of the problems for the solution of which the trained personnel of the Forest Service are responsible.

One of the most important benefits of the national forests, to John

Q. Public, is the opportunity that they afford for recreation. Fishing, on streams kept stocked by the government, and hunting, for big and small game, under state laws, are not the only nor the most widely-used privileges. These areas are available for camping, either overnight, en route, or for longer periods. To prevent indiscriminate use and danger from fires, campsites are established where water is available and fuel is to be had or is furnished. These camps are supplemented by skiing installations in favored localities. Altogether, 33 million persons visited the national forests during the past fiscal year, and of this number, 42 percent used the camping and picnic ground facilities. The national forests thus supplement the 46 million visitors to the national parks without interfering with any of the other uses to which these forests are dedicated. This extensive recreational use lies in the fact of the greater areas, wider distribution, and more convenient location of the forests. The parks are, and should be, far superior on the whole, in scenic attractions.

To give effect to the guiding policies of management on the national forests was not an easy task. "Scylla," on the one hand, representing the powerful drive for complete prohibition of all economic uses, and on the other hand "Charybdis," the special interests of the lumber, grazing, and mining industries, would by their conflicts have soon finished off the incipient effort to steer the ship



through a middle course, had it lacked the guidance of mariners whose goal was greater and vision more far-reaching than those of these conflicting interests.

Before the transfer of the national forests from the Department of the Interior to that of agriculture in 1905, the first round was fought. The Interior officials, under the influence of certain reports of excessive damage to pine reproduction by sheep grazing on the forest reserves in

Arizona, had issued an edict that grazing was *out*, and sheep and cattle were to be driven off by force if necessary, which was done, at least on some of the California forest reserves.

Instead of settling this point by edict, a scientist, Coville, of the Department of Agriculture, was asked to study this question, which he did on the Oregon forest reserves. His findings were that under certain conditions, grazing if properly regulated did not cause excessive damage to the forests. Acting on this advice the Department of the Interior decided to permit stock to graze on these forest areas. This was the entering wedge for the utilization of vast quantities of grass and palatable shrubs, which would otherwise have been not only wasted, but would constitute a fire trap and interfere with the reproduction of valuable timber species.

When in 1905 the Forest Service in the Department of Agriculture took over the management of the Forest Reserves, and the name was changed to National Forests, the sprinkling of professionally trained foresters, products of Yale, Cornell, and other scattered sources, were faced with a double jeopardy. They were easterners and it was claimed, knew nothing about western conditions, and still less, if possible, about the grazing industry. Yet they were committed to a policy of utilizing this great resource. In this emergency Albert Potter, a man brought up as a stockman, was drafted to help work out the problem, and a body of regulations was slowly evolved, seeking to adjust public interests and the protection of forests to the needs and demands of an industry which up to that time had made free use of the public domain, limited only by droughts, starvation, and wars between cattle and sheep men for the monopoly of the range, including illegal fencing and the filing of claims to control water sources.

It would make a story in itself to trace the course of this continuing effort on the part of professional Forest Service men, who had by this time acquired expert knowledge of range conditions and forage plants, to maintain a reasonable degree of control over the use of the forest range by stockmen. But this would exceed the space limits of the article. The adjustments involved substantial and unpopular reductions in numbers, to limit or terminate excessive damage from erosion and

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I Raised a Deer

Take it from one who knows, raising a wild animal from infancy to maturity cures you forever of the urge to become a hunter

By NATLEE KENOYER

THERE is always a certain amount of fascination and curiosity surrounding the raising of a wild animal, not to mention the question of what to do with it after maturity. However, that thought was far from my mind when I observed a tiny fawn running aimlessly in and out of the traffic on the Santa Cruz highway about three years ago.

I thought surely it would be killed before my husband could stop the car. We both ran forward and cornered the frightened baby at the base of a bluff. It struggled in my arms as I carried it back to the car. My husband went on to see if he could possibly find the mother. About 20 minutes later he was back and I knew by his face that something had happened.

"We've got an orphan on our hands." He opened the door and eased into the seat. "Back of that little hill I found her head and entrails. Poachers, I imagine." By this time the little fawn had quieted and was snuggled in my arms, no doubt glad of some kind of motherly protection.

I stroked the smooth head and looked into the brown eyes that were half closed. It couldn't have been more than three weeks old. Such a tiny, spindle-legged little thing with the familiar spots all over its body.

We hurried home and took the fawn into the kitchen. He seemed to have lost his fear and began wandering around nosing the chairs and the walls. I fixed a formula of canned milk, water and Karo syrup. After searching through my cupboards I found a rubber nipple left over from the days when my children were small. The only container available was a small Coca Cola bottle. This little fawn was the easiest baby I ever fed. Naturally he was hungry but there was no argument about taking the nipple. He sucked and switched his tail with apparent relish until the last drop was indicated by a wreath of milky foam around his mouth. We knew he could drink more but decided that

the same amount three hours hence would be the wise course.

"You'd better call the game warden." My husband gave me a sober look and I glanced back in surprise. We both, so absorbed with our little charge, had forgotten the fine that goes with the picking up of a fawn.

The game warden came out that afternoon and we told him our story.

"If you hadn't picked him up he would surely have been killed," he agreed with us. "I'll give you a temporary permit but being a buck he will become dangerous later on. We'll think of that when the time comes."

So began a different life for the deer and a most interesting one for us. Influenced by Walt Disney he naturally took his place with thousands of other Bambis and surprisingly enough soon knew his name. We built a small pen but we couldn't keep him in it. A deer, apparently, can climb anything he can get his front feet over. We finally gave up and let him run in the yard. We were afraid of cars but he became aware of them in what seemed a short time. He rarely wandered into the street, that is, until he was older. Sometimes we would miss him. Calling and looking until we were frantic. Eventually someone would see him lying in front of the

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(From page 13)

NEW WOOD PRODUCTS LABORATORY

CONSTRUCTION of a new \$3,000,000 Wood Products Laboratory building on the campus of the State University of New York College of Forestry is expected to begin some time this summer. The structure will house the Forest Utilization, Wood Technology, and Forest Chemistry departments.

The College sees the new laboratory as an aid to its three functions of academic education, public education, and research. New semi-commercial and commercial equipment will better prepare students for professional work. The College, now a center for special wood industry conferences and institutes, will be able to offer wider opportunities for this form of public education. Moreover, the College's \$500,000 research program is expected to grow with the enlarged space and improved equipment. The new L-shaped structure will include a four-story section and a one-floor shop wing. With 88,000 square feet of space, it will be the largest at the College. The foyers and staircases will be paneled of oak. The bridge which will permit entrance onto the third floor will be of wood; so will most doors, three conference and library rooms, three clerical offices, three department chairmen's offices, the student lounge, reception area, and staircases. The three office, library, and conference rooms will have panels of birch, maple and cherry, native New York hardwood species.

Several new pieces of machinery and apparatus will be featured in the new laboratory. In the veneer and plywood laboratory there will be a lathe with a 54-inch knife and 36-inch swing which will handle bolts of a minimum length of 16 inches. It will be possible to produce veneers of 20 different thicknesses. A wet veneer clipper with a knife operating at 250 strokes a minute will be controlled by push buttons. A new veneer clipper attachment, dryer, and splicer, together with a glue mixer and spreader and a plywood press, will also be included.

A 400,000-pound Universal testing machine will feature the mechanics and physics laboratory. The machine is a new development in wood testing and still is in the design stage. A stress-strain recorder on the machine will be operated electronically.

The research surfacer in the woodworking laboratory will have a feed of 20 to 60 feet per minute. Its cutting speed will be 1000-20,000 RPM. With mounted tachometers, the research jointer and table saw will be able to handle stock at speeds varying between 1000 and 20,000 RPM.

A wood preservation laboratory will include five impregnating cylinders, vacuum pumps, five 1000-gallon storage tanks, and a 1500-gallon sump tank. Estimated cost of this laboratory alone is \$50,000.

There will be five dry kilns with gas and steam heating. Three rooms will be provided for testing plywood, preservatives, and moisture. There will also be five temperature and humidity control rooms. The timber preparation laboratory will house a sawmill and associated equipment. Four more rooms will be devoted to the wood finishing processes. They will provide space for the mixing of various finishing materials, for application of the finishes, and for their drying and testing. Excellent facilities on the first floor will be provided for research and instruction in the fields of plastics and paper coating.

The second floor will house a physical and analytical chemistry laboratory, a wood chemistry laboratory, two conference and library rooms, faculty and graduate offices, a viscose preparation laboratory, a temperature control room, a cellulose laboratory, an inoculation room, and an X-ray laboratory equipped with X-ray machine and a mass spectrometer.

60 to 70 miles, about half of my time is spent on the road. And a District farm manager isn't accomplishing much while traveling in an automobile. Obviously, what is required are responsible owners who can devote 100 percent of their time to farms which they own and for which they are responsible."

But it is the growth of recreation—what Mr. Browning calls the "extra dividends" of the solidly-conceived Valley program—that has been both an eye-opening and profitable development for the Valley in recent years. Worth a million dollars a year annually to the region, according to the National Park Service, the program last year brought two-and-a-half million visitors from the three states of Ohio, West Virginia and Pennsylvania. Upwards of 200,000 people were entertained at the District's three parks at Atwood, Pleasant Hill and Seneca Lakes, Park Manager Harvey Crass reports. Receipts from District-owned vacation cabins that were sold out all season amounted to nearly \$20,000. A total of 5726 boats and 11,255 motors were licensed on the ten lakes last year. Concessions operated on the lakes report an increasingly profitable business and in some cases concession operators have greatly supplemented their income by winter-time occupations. The Holleyoak Brothers, Max and Lloyd, at Tappan Lake, for example, have now launched a profitable boatbuilding program. Selling for \$135, the "Holley" boat built of oak and plywood is 56 inches wide. Both comfortable and durable, the boat contains 700 screws and is built to last. With the demand for these boats increasing, the brothers sell all they can build.

Another source of satisfaction to the District has been the number of churches and civic organizations that have built camps for young people on the lakes. Some of these include the camps of the Ohio Future Farmers, Steubenville Methodist Church and the ABC Sportsmen's Club at Lake Leesville; Boy Scouts of America, Presbytery of St. Clairsville and Eastern Ohio Extension Service, at Piedmont Lake; The Ohio Conference of Congregational Christian Churches at Pleasant Hill; The Mis-

(Turn to page 38)

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(From page 36)

GLEANED FROM OTHER PAGES

IF YOU have ever dreamed of someday spending your vacation in the Hawaiian Islands, you'll probably rush right out and make plane reservations after reading the 47-page spread of text and pictures on the Islands featured in the May issue of **The National Geographic Magazine**. Beautiful four-color photographs, for which the **Geographic** is famous, enhance a well-written and informative article by Frederick Simpich, Jr., who has made the Islands his home for 20 years. The spread deals mainly with Honolulu, the Hawaiian metropolis, but includes enough about the other islands to make the reader feel that living there would be a pleasure, grass skirts, leis, and all.

An interesting picture feature in the May 8 issue of **Business Week** tells how the Air Force is training loggers to spot enemy aircraft. The story says that about two dozen logging companies have teamed up with the U. S. Air Force to watch for enemy planes in the remote areas of the west and Northwest. The companies install mobile radio transmitters in logging trains, in logging camps, and in loading cranes. Portable sets are also carried into the woods by foresters. The volunteer effort has been dubbed Operation Skywatch.

Joyce Rockwood Muench and famed Photographer Josef Muench team up for another of their delightful "story by her, photos by him" treatments in **Natural History** for May. This time they are exploring "Our Palm Oases." The reader is reminded that there are more than 100 palm oases in the Colorado and Mojave Deserts of southern California and western Arizona and that each is an "isolated island of charm, tucked away in a canyon cut into a stark mountain or foothill area." Photos, in black and white, are excellent.

The May issue of **Desert** magazine includes the disturbing news that "river reports indicate continued drouth for Southwestern states." The article says that the runoff in the Colorado and Rio Grande Basins this season will be even lighter than was predicted earlier this year.

An article, "The Future of Our Waterfowl," in the current number of **Audubon**, warns that protection alone cannot save many species of North American birds. Maintaining their habitats is the only permanent way of assuring perpetuity of the birds, the author says, adding that it's time people snapped out of the "historic thinking current in the Protective Era, and become more conservation-minded about current biological problems."

The publishers of **Pulp & Paper** announce in their May issue plans for the publication of the 27th Annual Review Number, which will be issued in July. The issue will contain between 50 and 100 pages of pertinent domestic and foreign information on the industry—including complete statistical tables, maps, charts, and country-by-country 'round-the-world surveys.

Commenting on current market conditions, the editorial in the May 1 issue of **Southern Lumberman** notes: "Nobody could say that there has been much improvement in the lumber market during the latter half of April; on the other hand, there has not been much change for the worse and some of the more optimistic are expressing the belief that the worst is over and that a turn for the better may be not far off. . . ."

Richard L. Neuberger, one of a number of well-known writers in the Pacific Northwest, does another of his fine jobs on "High Lava Country: The Klamath Wilderness" in the May-June issue of **Lincoln-Mercury Times**. He concludes that "the beauty of the region that first awed Lt. Fremont still endures, to the delight of modern motorists who spend their vacations in the dominion of stately forests and far-flung open spaces."

sionaries of the Sacred Heart at Seneca Lake; and the Camp Commission of the Ohio Ministerial Assembly of the Church of God and the Lions Club of Mifflin at Charles Mill Lake.

Sailing, both in the Lightning and Thistle Classes, is also on the increase on the lakes. Some of the clubs include the Mohican Club at Charles Mill; The Sunset Dock Association at Atwood; the Rockwood Park Boat Dock Association and Butterfield Boat Clubs at Leesville; the Briarwood and Indian Run Boat Clubs at Piedmont; the Pine Hill, Clear View and Pal Mar Boat Clubs at Pleasant Hill; and the Cambridge Club at Seneca.

As set up in the initial development plan, only 20 percent of the 365 miles of shoreline on nine of the ten lakes (Clendenning Lake will remain forever wild) is to be developed for commercial recreation purposes. In some cases the saturation point has about been reached, notably at Atwood. The growth of these cottages has been phenomenal from the start and good standards of construction are being maintained under District supervision.

Of the many recreational attractions offered by this lake land, the greatest of all, however, is the fish. And the fish—and whether he is biting or not—governs in large measure the size of the visiting crowd. In April, the fish were hitting hard in the Muskingum Lakes. When the word went out over television and in newspaper fishing columns that over 100 big bass had been caught at Seneca within a week, businessmen started arriving at 3 a.m. and left at 6 a.m. in time to be back in their offices by 9. Weekend arrivals were unusually heavy with all boats on most of the lakes quickly rented out. In view of the split-second timing involved in early-morning weekday fishing trips to the lake, it is not surprising to learn that Columbus business and professional people have given support to the State Board of Aeronautics in building a landing strip at Pleasant Hill Lake.

Bass, bluegills, Great Northerns, channel cat, crappies and some wall-

eyes are the fish most consistently caught in the lake land. All stocking is handled under the supervision of the Ohio Division of Wildlife now carrying on what it terms a "corrective stocking" program. But as everywhere, there are those periods when they don't bite and when Fish Management Supervisor Wickliffe reminds the sportsmen that "a quart of water from an Ohio Lake contains about 100 bugs—or 3000 pieces of fish food to the cubic foot." Pinning down the consistently "best" fishing seasons on the lakes also has its baffling factors for big bass have been caught during snow squalls in March and over Labor Day. Hunting in the District is also proving increasingly popular. Ducks, geese, squirrels, fox, grouse, pheasant and deer are the chief attractions.

These then, are the chief services and attractions of the 41,000 square mile Muskingum Watershed Conservancy District located in 14 prospering Ohio counties and with an assessed evaluation of \$699,270,500. To evaluate its worth in terms of good health and steady working habits of millions of people living within a radius of 100 miles would be well nigh impossible, but it is significant that George Putnam, former Republic Steel chief, said that his firm would never have won its Army E Award had it not been for the Muskingum Lakes.

In general, six great accomplishments have been chalked up by the District in its comparatively short lifetime. These are: 1) It reduced floods; 2) It is maintaining a stabilized streamflow in the District and reducing drought effects; 3) New building has been stimulated and the tax duplicate increased substantially; 4) It now entertains more than two-and-a-half million visitors every year; 5) Improved land-use measures and better forestry methods have been put into effect; 6) Since its creation, the District has paid almost \$400,000 in taxes to Ashland, Belmont, Carroll, Coshocton, Guernsey, Harrison, Holmes, Knox, Muskingum, Noble, Richland, Stark, Tuscarawas and Wayne Counties. All of these services will develop and expand in future years and with Mr. Browning and Chief Engineer J. S. Gena both looking to the future it is quite possible that the water phases of this program have scarcely been tapped up to this time.

"Yes, this program can be dupli-

cated elsewhere and effectively," Mr. Browning declared. "And it is certainly not true that federal and state governmental agencies dislike or will not work with setups where the control is centered in the watershed itself. But you've got to go to these agencies with an effective plan. You should have a survey, public support, and some local financing in order to make sound engineering studies of both possibilities and costs. Once thoroughly organized and with economically sound objectives, the Army Engineers and all the other agencies will give you their full co-

Water Congress

The first Small Watershed Congress in the history of the United States is scheduled December 6 and 7 of this year in Washington, D. C., as the result of a conference last month to point up present problems in small watershed management and what to do about them.

As outlined by Raymond A. McConnell, Jr., editor of the Lincoln, Nebraska, *Journal*, advancement of the soil and water conservation work of the nation through local people asserting local initiative and responsibility in partnership with state and federal governments is clearly a fundamental part of the legislative and administrative philosophy of the Eisenhower administration. How to assist the administration in activating this philosophy in the states and local communities should be one of the aims of the Congress, Mr. McConnell said.

A general committee to make plans for the December Congress was named at last month's meeting. The members are Waters S. Davis, National Association of Soil Conservation Districts; C. R. Gutermuth, Wildlife Management Institute; Edwin R. Cotton, Interstate Commission on the Potomac River Commission; and Mr. McConnell. Other conservationists who participated included Hugh H. Bennett, former Chief, Soil Conservation Service; Lowell Besley, executive director-forester, The American Forestry Association; E. H. Taylor, associate editor, *Country Gentleman*; Otto Liebers, Salt-Wahoo Watershed Association, Lincoln, Nebraska; Gordon K. Zimmerman, The National Grange; and Harry S. Mosebrook, Chamber of Commerce of the United States.

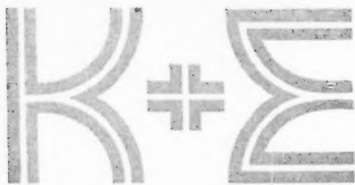
operation. Remember, when these agencies come in on your plan it means they will be working with pretty good people—the type of people they like to do business with."

At home at his Malabar Farm one day in April after his recent trip to South America, Farmer-Novelist Louis Bromfield told us "I live in the garden spot of the world and I am glad. These are good people and this is good land. And did you ever stop to think that with the completion of the St. Lawrence seaway, the city of Cleveland will be closer to Liverpool than New York City?"

A man who has shown considerable clairvoyance in the past is anticipating new conservation trends, Mr. Bromfield said that "Water is next. The campaign to educate farmers on the importance of good farming has now passed its peak. They are either doing it or going out of business. Actually, many of them are going out of business too—about 150,000 a year. But thousands more are doing the job right.

"New water is next," Mr. Bromfield stressed. "We are using water for irrigation on Ohio farms right now. More will be needed both here and everywhere. Fortunately for us we have the Muskingum Conservancy District right at our doorstep so we have a good start at least. Other sections of the nation aren't so fortunate. This is really a good part of the world. The growth of recreation in this region has been one of the most phenomenal things I have ever seen. And they still keep coming."

With Pleasant Hill Lake adjacent to his famous farm, Mr. Bromfield has been able to watch the development of the District practically from his front porch since its creation. And it has been both a pleasant and a worthwhile thing to see, he declares. Not the least of the benefits derived are the bus loads of high school and college students who arrive every year. The welcome mat is rolled out for all of these groups by both Mr. Browning and his staff, and Mr. Bromfield. These people represent the future, both men think. And they like to think that when they return to their homes that they tell others what they have seen and heard. For it is in this way that a real appreciation and feeling for land and its proper husbandry will be developed, little by little, in the consciousness of the American people.



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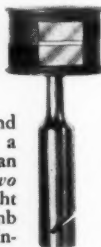


THE RIGHT ANGLE MIRROR

This instrument gives a slightly larger field of view and is adjustable. As an added feature, a small plumb bob is conveniently stowed in the handle.

THE DOUBLE RIGHT ANGLE PRISM

Consisting of two ground pentaprisms separated by a plano-parallel element, it can be placed on a line between two points and a third point at right angles can be sighted. A plumb bob can be attached or the instrument can be mounted on a staff.



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Famous Forests

(From page 21)

don, 1950), James Howard Williams further tells of elephants who silence the bells hung about their necks by miring the clappers in mud so they will not ring.

Later, when log jams occur in the river, elephants sent in to break them up sense just which key logs to pull out to get things moving again.

Although they have no union, elephants really have very good working hours. After three days of work they rest two days, and since they only work nine months out of the year, their total number of eight-hour days is only 162—during which time they bring out about 100 tons of timber. At the end of each work day an elephant's oozie or driver—whom he has known for years and trusts—takes him down to the river and washes him thoroughly from trunk to tail with a bough of a tree which makes a lather like soap. He then polishes his tusks with sand. The elephant thinks this is wonderful, and rolls over and plays in the river with delight.

Elephants must be inoculated against anthrax, and patched up after encounters with tigers—the standard Burmese remedy being to plug up the cuts with sugar. Those who have worked with elephants report that they are temperamental, and on occasion become morose and chase people. One of the chief problems of elephant labor is that each animal eats about 600 lbs. of fodder a day—chiefly bamboo shoots, and this can be a troublesome item. Three years ago Burmese elephants were imported into Borneo, but finding insufficient fodder they went to work on nearby gardens and plantations, and had to be sent home!

An elephant lives about as long as a man, and its working life is from its 20th to its 55th year, on an average. By the time they are six years old, elephants are branded with phosphorous paint on their backsides with their owner's mark, so that they can be identified as easily as a truck or car. An oozie is hired for each elephant when it is very young, and this is a lifetime association of trust and understanding. By the age of 25, an average elephant is supposed to understand 24 separate words of command, plus many more foot signals given by his

oozie, sitting just behind his head.

Teak is a very dense wood, and so heavy when it is green that it will not float. Consequently trees to be cut are girdled near the base, both the bark and the sapwood being cut, so that they will die and dry out while still standing. Three years later they are cut down, a hole is made in each log for a pulling chain, and the elephants get to work. Even after it reaches a river a teak log may wait several years before reaching market. It is not every year that the monsoons furnish sufficient water to carry all logs away. From the small streams the logs pass into the Irrawaddy and Salween Rivers where they are made up into rafts of about 125 logs, and floated down to Rangoon or Mandalay.

Originally teak grew clear down to the ocean, but it must now be floated down from about 1500 miles upstream. The British first imposed restrictions on the cutting of this wood in 1856, and in 1862 started plantations for reforestation, some 70,000 acres being under cultivation at the time the new Burmese Republic was formed. Normally there is but about one teak tree per acre, but it is planned to grow some 40 trees per acre in this project.

In India, Burma and other areas where it is native, teak is used for nearly everything—houses, furniture, bridges, railroad ties, etc.

The U. S. Navy still uses teak—for decking, hand rails, and certain other fittings, and it is fine for the railings along boardwalks at seaside resorts. In particular, the railing at Far Rockaway, in New York, is made of teak, and recently the city of Detroit ordered a great quantity of three and one-half by five and one-half teak—not a standard dimension—for hand railing for use in a park.

In the first quarter of this century the interiors of our Pullman sleepers were built largely of another wood from the Burma forests, then known as East Indian Mahogany, but today called Vermillion. This is not a true mahogany at all, but stained a deep red this wood produced a wonderful rich effect which added tremendously to the excitement of sleeping on a train when we were children.



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AFA Urges Governors to Name Committee

THE commercial forest lands of the United States, excluding Alaska, embrace an estimated total of 461 million acres. They are scattered throughout the nation. Based on U. S. Forest Service estimates (1945-1950), their ownership in point of acreage is as follows: federal 89 million acres; state, county, and municipalities, 27 million acres; privately owned, 345 million acres. Small holdings greatly predominate in the overall ownership. Farm woodlands and other holdings of less than 5000 acres represent 4,222,000 owners and a landownership of 261 million acres or more than one-half of the total forest acreage of the country.

During the last three days of October 1953, the Fourth American Forest Congress, an open town meeting 800 strong of those interested in the progress of forestry and in major forest land policies, met in Washington, D. C. under the sponsorship of The American Forestry Association, to consider a proposed program for forestry in the United States as formulated by a committee of conservationists meeting at Higgins Lake, Michigan in June 1953. One of the five major subjects discussed was forest landownership and this discussion was summarized by the Congress summarizer (Proceedings Fourth American Forest Congress: pages 347 and 348):

"The Higgins Lake Program recommends the establishment of Congressional and state committees 'to consider a desirable pattern for ownership of federal, state and private forest, range, and other conservation lands' and to formulate appropriate policies to achieve this pattern. The proposals reaffirm a general support of public forests, but suggest that future public acquisitions should not involve forest land which can be managed effectively in private hands. Further criteria are left for the committees to develop, guided in part by the deliberations of this Congress..."

The actual recommendation in the program which was so warmly supported by the Forest Congress is:

"To clarify the status, responsibility and action as respects the management and use of these lands for forestry purposes, we recommend that:

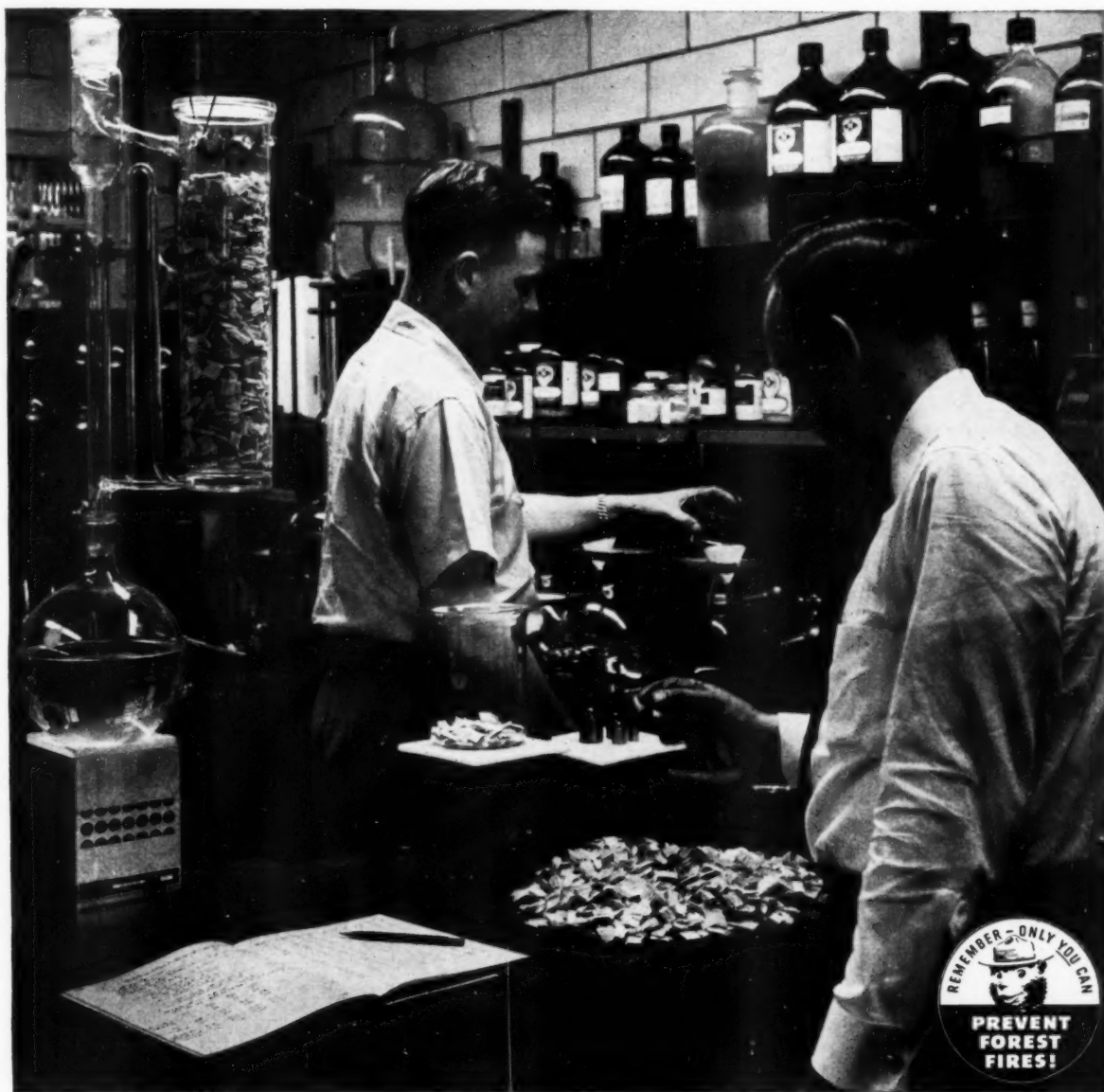
(1) Early action be taken by the

Congress to establish a joint Congressional Committee, consisting of members of the Senate and House Committees on Interior and Insular Affairs, the Senate Committee on Agriculture and Forestry and the House Committee on Agriculture, whose objectives would be:

- a) To consider a desirable pattern for ownership of federal, state and private forest, range and other conservation lands.
 - b) To formulate policies to guide action of public agencies toward achieving this pattern.
 - c) To recommend to the Congress legislation needed to enable federal agencies to implement these policies.
- (2) Early action by the governor of each state to appoint a committee to report on the conditions in his state as they may relate to items a), b), and c), above, and render a report which will be made available to the Joint Congressional Committee."

In view of the foregoing, the Council of State Governments is urgently requested by The American Forestry Association to pass the following or a similar resolution:

"Be it resolved that the governor of each state appoint as soon as possible a committee including a cross-section of the landowning citizens, the appropriate state officials, and the representatives of the federal bureaus administering federal lands in his state to report to him on the conditions in his state as they relate to a desirable pattern for ownership of federal, state and private forests, range and other conservation lands and desirable policies and necessary legislation to achieve this pattern both on the state and federal levels. Be it further resolved that the governor of each state make available as soon as practicable to the Congress of the United States the report of the above committee to the end that appropriate federal action may be taken to formulate and implement a sound federal forest land policy which will help to achieve a desirable pattern of landownership in all the states."



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**THE AMERICAN FORESTRY
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A Forester is First a Man

(From page 19)

State College Press in 1949. It is the major opus of McCulloch's 75 publications, a heavily documented, technical work, yet written in a spirited style that is highly readable. This quality lights up most of his papers. One with the solemn title, *Aptitude Testing in Forestry*, has this engaging start:

"After more than ten years of searching for a forestry aptitude test, Oregon State College has abandoned the effort (with some embarrassment). It was realized, finally, that forestry had become too diversified to be mastered by a student who owned only a forestry aptitude."

This leads into a pleasant essay on the values and techniques of *general* tests of aptitudes, attitudes and interests for potential forestry students. Their own personal futures are the first consideration. The future is within people, according to the McCulloch philosophy, not in jobs as such, not in technologies.

And so Mac writes about men and mountains and trees as entities that embody the life force and the life spirit. Skimming through back issues of *AMERICAN FORESTS*, I find Walt McCulloch, writing man, holding forth on the grand old logger, Bill Dyche of Klamath Falls—"the Algoma Kingpin"—in a style that is far afield from the academic. And on Roy Silen, a graduate of Oregon State's Forestry School, who has done interesting things in metal work, lens grinding and astronomy—a prime example of a whole man who was encouraged by his professors to develop aptitudes within himself beyond the urge for training in forestry.

As a writer, McCulloch's best bit of work is the chapter, "The Cascade Forest," in the Cascade Range volume of the Vanguard Press, *American Mountains Series*. Stewart Holbrook has called Mac's contribution the best chapter in the book. Characteristically, the essay starts with a picture of the Cascade Forest as an industrial resource that feeds many hungry mouths, and it ends with an inspiring tribute to Cascade Forester Oliver Matthews, great tree man, noble spirit. The author described himself, in a letter to Editor Roderrick Peattie, in this kind of loping language:

"With me the Cascades are a religion. The Santiam country just east of us finds my wheel tracks at every season of the year. Only Tuesday I made a sashay over the Santiam Pass and back again in the afternoon, to restore my faith in the mountains. No man can be mean in the presence of those great white peaks, and their cool presence does things for me."

Mac is an instructive tree man on a trip of that kind. Did you read his story of *Quercus garryana*, which he calls "the fighting tree," in June 1940, *AMERICAN FORESTS*? It is racy reading:

"Oregon oak is a hardy pioneer, a broadleaf impertinently battling for existence in a territory which by all ecological criteria (Watch out there, Mac.—J.S.) is the exclusive domain of conifers. The tree is short, squat, frequently gnarled, occasionally beautiful, always tough. Saw down (with much perspiration) an Oregon oak. Buck it up (more perspiration) into short lengths. Then attempt to chop it. The wood will spit the ax right back at you. That's how tough it is."

Now Mac was at work in the woods more than 32 years ago, as compassman and cruiser for the Old Dominion Forest Service in Canada. There followed four summers with the British Columbia Forest Service, on protection, and with parts of two more years employed in forest research. He was graduated from the provincial university as a B.A. in 1925, far enough out of his teens to escape the dreadful description of "prodigy." Young McCulloch boarded a ferry for Seattle in 1926, and as he came of age he began the process of naturalization as a citizen of the U.S.A.

The McCulloch career in education continued with a year of graduate work at the University of Washington. Then he climbed on an east-bound train. He was "studied out." He hungered for new things in life.

For the next four years Mac was tallowpot, shack, wiper, and the holder of other railroad jobs with even rougher names on the Erie Railroad. It was, in effect, the drive of an inner urge to learn and grow on in a wider range of experience than the practice of forestry or its teaching. Pioneering was in the lad's

blood. His father had been a young steamboat man of the mountain rivers and lakes of British Columbia, then a specialist in railroad construction. His mother had traveled by covered wagon from eastern Canada to the prairie provinces. Beside rail-roading and steamboating, Mac took working turns in building construction, wholesale hardware, ship chandlery and steel making. Then he kept working on the railroad until, he says, "the depression bumped me off the bottom of the extra board."

And so the prodigal returned to forestry, at the New York College of Forestry, of Syracuse University, where McCulloch took another two years of graduate study. By 1936 the young man from out of the west was well girded and armed with forestry technology, apparently ready for great things in his profession; studying, and teaching at Syracuse, summer camp in the Adirondacks, then operating a nursery and an experiment station for Michigan State College. The New York College of Forestry yielded him an M.F. in 1936.

His further studies were in education, and he pursued them at the University of Southern California, Oregon State College and the University of Oregon. In 1947 the latter institution granted Professor Walter Fraser McCulloch, head of the Department of Forest Management at O.S.C., an Ed.D. Few men of Mac's age have more alumni associations on their trail than he has. And no biographer of his can be blamed for despoiling his record of academic pursuits and of jobs and occupations in terms of a super-Dagwood sandwich. For a final slice, Mac was Acting Dean of the Corvallis Forestry School in 1952-1953 while Dean Paul Dunn was on a year's leave of absence for special service in Chile.

McCulloch went to work at Oregon State in 1937 as an assistant professor, teaching forest management. Then State Forester Nels Rogers, of evergreen memory, drafted him for service as an assistant in the years 1942-1945. They were critical years in the Oregon woods. The new Oregon Forest Conservation Act had to prove its worth in wartime, when military needs for lumber were putting tremendous demands on all hands in the timber. The only enemy bomb to strike the American mainland was in an Oregon forest. "Forest Defense Is National Defense," was a slogan plastered all over the Pacific Northwest. McCulloch's last main job in state forestry was camp



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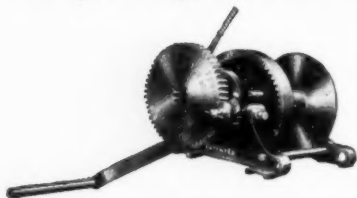
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boss in the fight to contain the third great fire to sweep the 300,000 acres of the Tillamook Burn—a forest of giant snags since the tree-killing holocaust of 1933. A second tidal wave of fire was in 1939, the third was in 1945.

In the fall of 1945 McCulloch returned to Corvallis to head up the School of Forestry's Department of Forest Management. His advanced studies in education led to his work for the school as counselor and as developer of a program of job-placement and follow-up in the field for O.S.C. forestry graduates, in addition to his departmental duties and classroom teaching. How Mac finds the time to do the reading, writing and orating that he does, nobody knows. Forestry has no spokesman more fluent and magnetic on the platform and off the cuff, than McCulloch. In November 1952, I saw and heard him stir up a sleepy session of forestry education pundits at Montreal with an electric talk that was made with hardly a glance at the manuscript, after a reading start, and which left nary a participle dangling from the podium. Mac was very good indeed at Montreal. But his best is given to students at Corvallis.

This is no place to try to brief a philosophy and a program of technical education that is packed in three large publications, *Forest Management Education in Oregon*, *The Forester on the Job*, and *Personnel Program*, School of Forestry, Oregon State College. Instead, take a glance at Mac's work through the eyes of Oregon State Forester George Spaur:

"He has long felt that too many foresters have come out of school with a good knowledge of technical forestry but little or no knowledge in other fields. This lack of training is often reflected in the inability of these men to express themselves adequately either in speech or in writing . . . largely through his efforts, (forestry) students are required to take courses in English literature, vocabulary building and extemporaneous speaking and are encouraged to take elective subjects in other fields."

George Spaur also likes McCulloch's kind of program for lining up summer jobs for his students, with both industry and government. His ideas ride off in all directions from the simple provision of an employment service for forestry students. At summer's end Mac secures detailed reports on attitudes and performance from the seasonal employ-

ers of his young men. The reports are scientifically analyzed by the counselor and his associates. The conclusions are then put to work individually with the students, through the channels of counseling and guidance. Mr. Spaur notes that the Oregon State Board of Forestry now has 50 O.S.C. forestry graduates in its employ.

Personnel managers of the largest logging companies and forest products manufacturing corporations unite in support of the O.S.C. program of record-checking on forestry graduates at one-, three-, and five-year periods after graduation. It is an exhaustive follow-up on significant details of job performance, attitudes, human relations and phases of individual development in the making of a whole man in the way of life of a technically-trained forester. The student learns to look ahead to the follow-up program as an extension of the service of education in his professional progress and formation of individuality. The McCulloch philosophy and plan of counselling, placement and follow-up has, as noted, been of use to the counselors of the other eight schools of Oregon State College, under the direction of Personnel Coordinator Dallas W. Norton.

Mac himself would be the last to hoist the claim that he is the pioneer of this philosophy of student development. In fact, he quotes Fernow as one of his idea sources. But he was one of the very first to put it to work in forestry education. And he lives it himself, in pursuits, hobbies and concerns that keep him in a working circle around a variety of things beside forestry, education and writing.

A McCulloch project, born away back in 1919, bears the title, "Woods Words." It began with ten terms that were noted in the talk of veteran adz and ax men who called themselves "horse-camp tie-hacks." Now Mac has 4000 and more terms and words compiled, set forth and defined, all of them carefully and some entertainingly, for Mac is a humorous kind of cuss.

This is no piddling glossary, in any part. Instead, "Woods Words" is on the order of H. L. Mencken's monumental *The American Language*, which has grown for 30 years under his hand, through new supplements. Now other hands, mainly those of specialists in the various fields of American life and language, must carry on the compilation of words dead, words worn thin from

long usage, new-born words of the common usage. Walter Fraser McCulloch is playing a vital part in this labor of love and scholarship, with his "Woods Words" from loggers' language.

Woods men. Woods words. Woods teaching. Woods writing. To these things Mac gives his time, heart, soul, mind and hide, most of all to men of the forest and of the forest books. He has a hot pride in, and a steely loyalty to, the fernhoppers of Oregon State—and as "fernhoppers" they are known all over the West. Their response is in the weekly stack of letters from all over the United States that is "cold-decked" on Mac's desk. During the war years, he wrote a monthly newsletter to 125 men in the Armed Forces. It is another example of his faith in the "follow-up" in his philosophy of education.

PETER E. TERZICK, of Indianapolis, Indiana, editor of *The Carpenter Magazine* of the American Federation of Labor, has been named an honorary vice president of The American Forestry Association by the Association's board of directors. He succeeds P. H. Noland, of Kentucky, vice president of the Minneapolis-Moline Company. Long active in the work of the AFA, Mr. Terzick was one of the most active participants at the Higgins Lake, Michigan, conference of the AFA to revise its Program for American Forestry. He also took an active part in the Fourth American Forest Congress and contributed one of the finest summaries of this event that was published in the official Congress proceedings.

This and other ideas of the kind are taking root everywhere in the schools. Recently I spent a day at a conference attended by 420 English teachers. Again, I sat in at a session of geography teachers. For eight years I've worked with teachers of the Shelton, Washington schools, in the production of an annual forestry pageant. Everywhere programs of student counseling, vocational guidance, the need of the science student for courses in the arts and the humanities, the need of the English student to find an interest in plain, practical things, came up for discussion. In areas where McCulloch once explored and pioneered he now begins to feel crowded. Education is going forward in America, and this is the finest sight on earth to Oregon State's forester of men, Mac of the Fernhoppers.

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Our National Forests

(From page 34)

the destruction of small tree seedlings by browsing, the exaction of fees for formerly free public range, and the prolonged contest over the scale of these charges, the allocation of the allowable grazing capacity among applicants, the problem of discrimination in favor of large numbers of small outfits, how to cut down oversized and monopolistic companies, the best ways to secure cooperation of the stockmen through advisory boards, and what to do about needed range improvements. In fact, the problems of the range were enough in themselves to keep an entire organization busy. But added to the direct interests of the grazers there were all the problems of adjustment to other interests, one of which, that of erosion and the damage done to farm lands, has been mentioned.

The real core of this problem lies in an ancient custom, known as the easement or right of user. Unless put under permit and paid for, mere use for a prescribed period ultimately crystallizes into an inalienable right to such use. The period of free grazing went far to solidify the stockmen who had established exclusive rights to range, by reason of fencing not only water but the free range itself, or by running off competitors in the conviction that the range was theirs, and its use was not subject to interference, much less cancellation, by any act of government. The Forest Service could not ignore these rights of user, and from first to last has had to proceed with caution in the effort to maintain the dominant authority of the government to protect the rights of

all other classes of users, and of the public at large, against the loss or damage to these rights by the assertions and attempts of stockmen to acquire exclusive property rights in national forests. Many concessions have been made to these stockmen, but the Forest Service has on the whole been able to maintain a reasonable amount of control. Pending congressional legislation on this subject represents only the latest attempt to reach a fair adjustment, acceptable both to the livestock industry and the public.

The next problem to be tackled on the national forests was the mining industry. It was unthinkable that prospecting and mining should be banned from these reserves as it was in the national parks. So the administrative act of 1897 permitted the same freedom to miners, in locating, working and patenting claims within these forest boundaries, as applied under local and federal laws on the remaining public domain. Gold, silver and other precious metals have a far greater value for the land which they occupy than timber or forage, hence their extraction follows the law of the greatest good to the greatest number.

But so high was the priority that attached itself to prospectors and miners in the west, that the entire mining industry is fiercely resentful of any control whatever, right down to the present day. Miners, they hold, must continue to be untrammelled as they have been so far, in their right to decide, on inspection, that there is "gold in them thar hills" and to stake out claims, which by this mere act gives them exclusive right of possession against all comers, when the description is filed in the nearest county clerk's office. To require these free lancers also to file their claim in the nearest U. S. Land Office was in their opinion too much trouble and expense—it might discourage prospectors. If the Forest Service wants to know about these adverse, unheralded liens on the people's possessions, the officers can find out by trying to sell some timber or locate a road, or the public may be advised of it by no trespassing signs on a fishing stream.

Of course, something more is expected of the locator and possessor



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of a mining claim than just a stake or two and some man Friday's footprints in the sand. He is supposed to do "assessment" work each year to a certain value in developing his claim. He can hold possession, adverse to all public rights of use, as long as the validity of this annual assessment work goes unchallenged by inspection, involving tedious administrative reports, procedures, hearings and decisions in the U. S. Land Office, an agency bred in the atmosphere of disposing of public lands, not keeping them.

Lode claims can be taken in strips 1500 feet long, and 600 feet wide; good for controlling stream banks and blocking access to timber. Placer claims can be filed on areas of 40 acres ostensibly to work the ground for "gold." Combinations and syndicates can be formed to control through this means solid blocks of timber.

The plain facts are that anyone can obtain possession and exclusive private use of a piece of desirable land within a national forest which he covets for a fishing lodge, roadside stand, or retirement in his old age, by means so devious that it is next to impossible to pry him loose, and if done, at great trouble and time-consuming process, as in the case of certain claims filed for black-mail, astraddle of the Bright Angel Trail in the Grand Canyon, another locator can immediately file on the same claim. The Grand Canyon case was cured by making the area a national park. The plight of the peoples' possessions known as the national forests is worse today than ever before, with 84,000 claims covering 2,163,000 acres on 60 percent of which the intention to acquire values other than minerals is so obvious that it has become a scandal. (83rd Congress, 1st Session, H.R. Report No. 1093. Committee on Agriculture, to accompany H.R. 5358, Aug. 3, 1953.) So far, the liberality of the policy towards mining within the national forest resembles the Arab who permitted the camel to put his head in the tent! Yet this situation could be cured by the simple device of refusing to grant title to the surface of mining claims, or give to the occupant the exclusive right of use and possession. Thus, with no actual handicaps on mining, the public rights in timber, grazing, fishing and access could be preserved. The forces which have so far prevented this accomplishment are of the same nature as those that dominated the free

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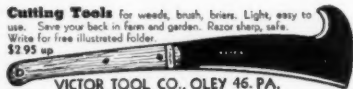
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range, but while grazing has been put under at least partial control, the miner, and his host of fake imitators, still rule supreme and their word is law on the national forests.

For this situation the true owners of these forests, the people as a whole, are directly responsible in permitting it to continue despite exposure of the facts. It is their possessions that are threatened. There is not enough accessible national forest land to go around if it is to be parceled out in individual "mining claims" to all who prefer exclusive possession of a "claim" to the right to free access and sport on 180,000,000 acres. In this field, the foresters still find themselves at the mercy of laws and customs as obsolete as the dinosaurs, and are helpless to control the situation, lacking the public support to overcome the entrenched strength of the western mining interests in Congress.

The persistence of this dangerous and widespread threat to the integrity and functioning of the national forest system, and its accompanying damage to every class of user, lumberman, stockman, sportsman, and recreationist, can only be explained by the power that special interest groups possess over congressional

policies, with absence of organized and audible public sentiment in defense of common interests.

In conclusion, all men trained in the profession of forestry, whether they find employment in federal, state, or private organizations, if they are members of the Society of American Foresters, are assumed to have received basic training along similar lines as the foundation for later specialized work as forest managers, researchers, or wood utilization experts. They all are, or should be, inculcated with the ideals of service which is the heritage of any true profession. Their immediate obligation is to their employers, but beyond and above that is the duty to serve the best interests of the community and the nation. The men who guide the policies of the national forests are of the same caliber, turned from the same lathes, as those who direct the aims of private forest enterprise. As long as each group is true to its professional heritage and objectives, conflicts as they arise can be settled not to give undue advantage to a single interest, but in fairness both to the special classes of users and to the overall, controlling interests of the American people.

I Raised a Deer

(from page 35)

woodpile, calmly chewing his cud and apparently enjoying our search for him. It was amazing how those spots blended in with almost any part of the scenery and it was necessary to look twice in order to see him at all.

As he grew older he spent a great deal of time lying on the front

porch. It was a source of amusement to me to hear a car passing the house suddenly become a confusion of squeaking, hastily applied brakes. The amazed, astonished expressions of the occupants as they saw a live deer resting serenely on a front porch. I used to speculate whether I was competing with Alcoholics Anonymous in changing the habits of some of our local residents.

Our three cats and two wirehaired terriers soon took Bambi for granted and even offered to play with him. He would make a wide sweep of the yard gathering speed and then with that ridiculously funny leap would come bouncing back on all four feet at once. As he neared the dogs he would stop and start running again. The dogs would chase him for a short distance and then watch his return, just as fascinated as we by that peculiar bounce. He started going with the dogs when they left the house. He was no longer spotted but had a smooth tan coat flecked with a few white hairs. The dogs

tolerated him at first like a lagging little brother but when he came to their rescue by putting a few vicious dogs to rout, with his sharp front feet, I noticed that they appeared to regard him with respect and as their protector.

It was an interesting sight to watch a group of dogs gather on the corner, as dogs often do. Bambi would raise the hair on his back, not unlike a cat, and with each step his head would work up and down like a pump handle. He did this with all strange dogs and if they made a move of which he didn't approve they felt the sting of his hoofs. He could strike so swiftly that only the blur of motion was visible. Having none of his own kind to associate with, I believe, that Bambi thought he was a dog. When my husband would bring home meat scraps, from a cafe, for the dogs, Bambi always wanted his share. Quite unconcerned, he would stand and chew on a piece of steak scrap.

It was a sad day for us when the game warden came out and said it was time to take him away. He was now eight months old and larger than most coast deer. No doubt because of his milk diet of which he always consumed two formulas daily.

I wanted assurance from the war-

den that he wouldn't be in danger of hunters' guns. It was decided that the safest place for his future home would be at Big Basin. With only one way in and one way out in the whole ten thousand acres, the warden assured me, there would be little danger from poachers.

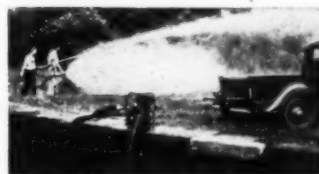
It was Sunday that we started for Big Basin. Going around the many short curves soon made the children car sick and even Bambi. When we reached the park the ranger directed us to the man who cared for the park deer. I think Bambi must have suspected something because he pressed against my side and if I moved he nearly toppled me trying to stay close by. I had brought a bottle of milk along in case I couldn't get away and it was a good thing too. We finally succeeded in locking him in one of the wash rooms because he wouldn't leave me. With the door shut I could hear his pitiful, frantic crying. It was the hardest thing I ever had to do. There were tears in my eyes when I got back to the car and we were all silent on the way home.

I've never gone back to see him because one parting is all I could ever stand. I know one thing, for sure, I'll never, never become a deer hunter.

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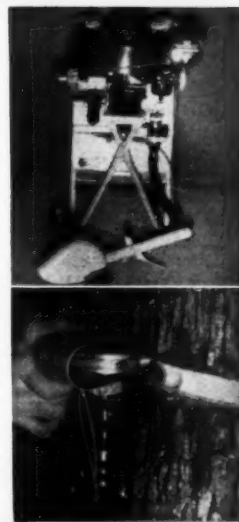
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Twin Crops

(From page 18)

Particularly successful and beneficial has been the range riding program. "Cow-poke" Ed Jones has proved efficient in this roving assignment. Hired cooperatively by J. Neils and the Glenwood Cattle Association, which was organized in 1946 by 16 ranchers in the Glenwood Valley, Jones puts in his full time inspecting fence lines and checking range use. He lives in his cabin on the Plateau block and stays with the cattle during their grazing period on the various pastures.

Chief Forester Elmer Lofgren, a University of Washington graduate, sums up the record for Jones' effectiveness.

"For the first time in the memory of permittees, trespass stock almost reached an absolute minimum after Jones went on duty. His looking after cattle at calving time has paid off in a larger calf crop. Cattle came off the range in much better condition, which means a better market price."

The grazing program as carried out by J. Neils today covers principally the following blocks: The Plateau, which is broken into six pastures totaling 16,750 acres; the Jackel, totaling 18,869 acres and the Glenwood block of 16,240 acres. The company's remaining acreage is handled under a cooperative arrangement with the U. S. Indian Service and is administered by it.

Of these the Plateau block, grazed by members of the Glenwood Cattle Association, has had the most intensive development and use. The Jackel block is also intensively managed, and is used primarily for sheep range.

The outlet block is not used to its fullest grazing capacity. Management on this unit is complicated by state landownership, with resultant difficulty in working out satisfactory leasing and fencing plans.

"According to range examiners, the Glenwood block has some of the finest pine grass-elk sedge range in Washington. Total aggregate use of feed in this block does not exceed ten percent. When and if full use is made of the area a good salting program will be required. Active logging is in process in this block and

some reseeded work may be needed," states Lofgren.

The Underwood Soil Conservation District has been making periodic forage utilization surveys on the company's managed range areas. In these "grass-root" reports special commendation has been given the stockmen for efficient forage use. The development of water sources had been cited as a special aid in securing distribution and proper utilization.

Good salt distribution has been particularly helpful. The forestry staff of J. Neils numbers the locations of salting stations on the ground. Cattlemen are now asking for these utilization surveys, which pin-point progress being made.

In the Plateau block 90 miles of fire access roads have helped open up the area and distribute cattle grazing more favorably. The roads also serve a special purpose in aiding timber salvage work now being carried on by J. Neils on the once-logged area.

Principal grass on the range is elk sedge. Associated with it are mountain brome, June grass, rye grass and Idaho bunch grass.

It is estimated that to date the carrying capacity of the managed range has been stepped up at least ten percent.

In contrast, other unmanaged adjacent ranges have deteriorated to wasteland with no carrying capacity. Company officials believe that ultimate range capacity can be doubled in a 20-year period.

Experimental seedlings have been established, 600 acres in 1942 and five plots totaling 20 acres in 1948, all on the Plateau unit. Approximately \$3000 was spent from 1940 to 1950 on reseeded work. Average annual expenditures since then have approximated about \$600. Species used have been mostly alta fescue, orchard grass, tall oat grass, bulbous blue grass and timothy.

During 1945, 1946 and 1948, 11 stock ponds or earth dam reservoirs were constructed. All but three have provided ample water for stock watering purposes and have a storage of 25,000 to 50,000 gallons of water for fire protection purposes if needed.

On the tree growing side of the picture, Forester Lofgren reports an increase in natural restocking from 48 to 68 percent stocked in a 20-year period. A snag falling program has been carried out, with about 8000 snags felled to date; approximately five percent have had salvage values.

"A total of 219 acres of experi-

mental pine plantations have been established since 1939, with about 155,000 seedlings set out. The first plot of 23 acres in 1939 proved that such plantings were feasible. Trees in that area today are about 15 feet high, with an average survival of over 90 percent. Complete grazing protection was given this area during the early years," says Lofgren.

The Department of Forestry, State College of Washington, has planted three half-acre plots for two years, testing 1-0, 2-0, and 2-1 ponderosa pine seedlings. Planting stock has been furnished by nurseries at Pullman, Wash., Missoula, Mont., Bellingham, Wash., Wind River, Wash. and by the Pack Forest. Planting costs have ranged from \$7 to \$26 an acre, with survivals running from 42 to 92 percent. Two plantings, however, were complete losses because of late spring droughts.

Poor natural restocking on portions of the Plateau block has in a large measure been due to overgrazing and poor handling of stock. This is proved by the better restocking of these lands since the grazing management program has been in effect. More trees per acre are therefore a direct result of harvesting grass on a sustained-yield basis.

The range management program is supervised by the J. Neils forestry staff, consisting of Chief Forester Elmer Lofgren and his assistant, Ted Yedlick. Logging Manager George Herion also works with this staff in developing plans.

According to inspection officials, the J. Neils grazing program particularly demonstrates the importance of follow-up work in making steady gains in range improvement. Annual utilization checks and accompanying reports by Soil Conservation District personnel have been instrumental in noting accomplishments and in correcting weaknesses. This on-the-ground cooperation between the company, permittees and service technicians has paid off in improving the land for both grass and trees, thereby assuring the lasting economy of the surrounding communities.

Other phases of the program include the seeding of old logging trails, skid trails, landings, old meadows, and other suitable areas for grass growth.

Fences and water holes are being put in. "Riding fence line" is now a tree farmer's chore.

Pine trees and grass get along well, say these eastern Washington land managers. It means more land at work, producing income dollars.



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The Great American Playtime

(From page 27)

harmless reptiles. Roads lead to the most important parts, horse and foot trails to others.

Virginia (Shenandoah): This beautiful park stretches along the top of the Blue Ridge of the great Appalachian Mountain System for a distance of about 75 miles. A narrow park, it ranges from two to 17 miles in width. Most of the area is still a wilderness and the rolling mountains are covered with timber. Dozens of little trout streams flow through the steep canyons. More than 200 singing waterfalls tumble over sharp cliffs or drop step by step into shady glens.

Washington (Mount Rainier): Great Mt. Rainier, one of the oldest mountains in the world, is the feature attraction of this national park. Crowned with a gleaming half globe of snow, Mt. Rainier, once a volcano, now carries on its shoulders 40 square miles of glaciers. In delightful contrast to the park's 26 active glaciers can be found flower-covered mountain meadows and deep forests, and a great variety of mammals, birds and flowers.

(Olympic): The rain, forests, wild-life, upland flower meadows, glaciers, lakes and streams make this a unique

wilderness. Set in one of the country's most rugged mountain masses, the park has few roads. White glaciers creep down the cold peaks. Heavy forests grow in the broad valleys. Singing streams race through deep, winding canyons. Blue lakes shine and sparkle in the sun. All about there is the kind of peace found only in a true wilderness.

Wyoming (Grand Teton)s Once a noted landmark of Indians and mountain men, Grand Teton has 11 mountains of such boldness and prominence they rate as major peaks. The park also has 12 glaciers, eight large lakes, numerous snow fields and extensive forests of pine, fir and spruce.

Wyoming-Montana-Idaho (Yellowstone): Famed the world over for its geysers, friendly bears and spectacular scenery, Yellowstone is a magic name among our national parks. It is the largest, oldest, best-known and most varied. It is the world's greatest geyser area. It is one of the world's largest and most successful wildlife sanctuaries. It features good auto roads, speedboats for rent and an extensive system of trails for hiking and horseback riding.

Return of Handyman

(From page 15)

project, and there are inevitable delays if the right kind of experts cannot be secured in the proper succession.

So to heck with it, the "do-it-yourselfers" declared, and turned the clock back with their bare hands.

The cash savings in wages, one of them told me, was as much as \$50 or more on a job that could be done over a weekend, or on a holiday. Often whole families pitch in and help, particularly boys who have had any manual training courses in school.

But not all the "do-it-yourselfers" took up the idea for practical or economic reasons. Some just like to do things with their hands. They are not concerned about saving or making any money. Perhaps they do not belong to the current boom, because many of them have had home workshops for years. However, the ranks of the hobbyists have increased, too, so I asked one of them whether the vogue might fade and pass, as has Tom Thumb golf and similar enthusiasms that once swept the country.

"No, I don't think so," he replied after a moment's thought. "I know I

intend to go right on with my wood-working, at least as long as I have a regular desk job in the city, and I may step up my activities after I retire. You see I shove papers around all day, making recommendations that are only parts of decisions higher up. Very frustrating. From woodworking, no matter what I turn out, I get a sense of accomplishment; of seeing an end product that I have worked on all the way through. I admit some of the things I produce are purely decorative or ornamental—but the real fun is in the doing."

Unquestionably my friend represents a small but solid minority, a "blue lodge" of "do-it-yourselfers" who are not interested in monetary return, although their lamp stands, book shelves, bird houses, display cases and other gadgets may make welcome gifts, or items that can be donated to church bazaars, Boy Scout drives or other charity benefits. Some of these enthusiasts devote weeks and even months to fine cabinet-making and other home furnishings, probably with the pleasurable thought that they may be creating genuine family heirlooms.

Because home workshops, like television, have proved an effective means of inducing the man-of-the-house to stay at home during leisure hours, women have recently taken a keen interest in power tools, lathes and other technical equipment. Salesmen report that a good percentage of the "heavy stuff" is being sold to the distaff side as birthday or Christmas gifts for the men folk. Machinery manufacturers took a cue from the motorcar makers, adding a dash of color and trim that might appeal to the ladies! Stylists have moved into the act, too, with tapered "calfskinner" slacks and sleeveless blouses of summer poplin for lady "do-it-yourselfers."

Retail lumber dealers, in many cities, are going all-out for the "do-it-yourselfers," but they are not the only ones aiding and abetting the cause. Some book publishers have made a business of encouraging and instructing the home craftsman, and others are rapidly jumping aboard the bandwagon. So many "how-to-do-it" books have been issued in the last few months that libraries are now devoting special shelves to them, and have ordered two or three extra copies of the manuals most in demand.

(Turn to page 57)

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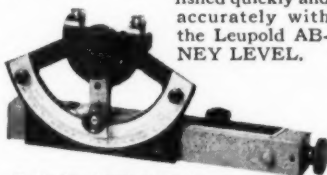
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THE AMERICAN FORESTRY ASSOCIATION
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Return of the Handyman

(From page 55)

In addition, newspapers have added "how-to-do-it" feature articles which have attracted advertisements for the latest power tools, lumber bargains, and accessories. These special sections or stories can generally be found in the Friday or Saturday editions, to catch the weekend handyman trade.

The National Lumber Manufacturers Association, a nonprofit organization of federated lumber groups, in cooperation with a national farm magazine is offering prizes totalling \$10,000 to rural home owners who, during 1954, remodel, modernize, renovate, or otherwise improve their dwellings. Primary consideration will be given by the judges to the following factors: convenience, utility, added living space, appearance and ingenuity. While the contest is not limited to "do-it-yourselfers," most farmers are pretty handy with tools, and it is a safe bet that most of the rural remodeling will be done by the home owner himself.

Like every other trend that has swept the country, "how-to-do-it" has drawn some criticism and good-natured poking of fun. The barbs haven't been aimed so much at the handyman, past or present, as at some of the new-born escapists or self-expressionists. Hal Boyle, the humorist, terms "how-to-do-its" as "this time-wasting, mind-warping ailment of our times—the sad, neurotic desire to make yourself feel important by doing something that really doesn't need to be done."

Boyle threatens to publish an anti-how-to-do-it book, which will consist of "a single page followed by a long index listing how-to-do 1001 different things. No matter which of the 1001 how-to-do items you look up, it refers you to page one. On page one is printed a single word in large block letters: "DON'T." Boyle admits, however, that there might be a good market for a book entitled "How to Inherit Money!"

Well, however you look at it, the "do-it-yourself" or "how-to-do-it" trend, or vogue, or boom, or whatever you want to call it, is undeniably America's littlest big business or biggest little business today. Many factors indicate that it is not only here to stay, but that it will continue to grow in membership, activity and enthusiasm.

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Reading About Conservation

By ARTHUR B. MEYER

IF SOMEONE asked "Is there a hunter or a fisherman in the house?" most of us would stand up. Participation in these sports is an American tradition regardless of how infrequently we go afield—or if we just dream about it. As a result, volumes of material in magazines, newspaper columns, and books are written for the hunter and fisherman. In this large volume of words a wide range of subjects is covered, but dealing, as most of it does, with either the preservation or the use of the wildlife resource, or with an appreciation of the out-of-doors it is relevant to the subject of conservation. And a lot of it is first rate reading. One such book that came to our attention this month is *The Collier's Book of Hunting and Fishing* by Raymond R. Camp (A. S. Barnes & Co., 216 pp., \$3.95). The book is divided into three portions: Fresh Water Fishing, Salt Water Fishing, and Hunting. The author writes entertainingly and interestingly about the pursuit of individual species of fish and game, with emphasis on the fishing. He discusses where to go and how to try for a successful trip, including methods, baits, and equipment. He writes with much ability and an obvious appreciation of the intangible rewards of sports afield. The book is recommended for either the experienced sportsman, who can claim the author's experiences as his own, or for the person who is just interested in acquiring a bird's eye view on a wide range of sports.

After joining Mr. Camp in the fields and on the streams for a couple of evenings, the reader may really have his tastes whetted for life in the open. In this case a vicarious adventure in the wild and frozen North may be experienced by reading *Crazy-White-Man* by Richard Morenus (Rand McNally, 320 pp., \$3.75. Published in 1952). This is the story of the experiences and observations of a New York advertising man during his transformation into a very good likeness of a Canadian bushman.

The author is ordered by his doctor to get out of the city and change his high pressure mode of living. He does not "retire" to a farm, as seems to be the habit of the nervous pavement-pounders, but rather to the Canadian bush country. He buys a small island from a bankrupt, would-be resort owner and takes off for it, sight unseen. He has fond hopes of spending his days hunting and fishing, with a few periods off now and then to establish himself as a writer of renown. In short order he finds himself on the treadmill of bush living, one that leaves little time for other activities than just keeping alive. Hours each day are required during the winter to get water out of the deeply frozen lake. His winter's supply of wood, cut from dry timber of the wrong species, melts away before the demands of the sub-zero cold that presses down on his cabin. However, by dint of much water hauling and wood cutting, he manages to get through the first winter, wiser, but almost penniless. His bills to the Hudson's Bay Company he manages to pay off the next summer by hiring himself and his island out to visiting sportsmen, a process that leaves him somewhat richer, and much wiser.

Into the theme of his own adventures the author weaves many tales of the North Country and its people, including the Indians, whose name for him provided the book's title. At the end of six years he returns to civilization, genuinely sorry to leave the wilds and feeling that he is just beginning to acquire an understanding of the bush. Very well written, by a sensitive and intelligent observer, this book succeeds in making the reader feel that he has shared the author's experiences.

Forest Management

American Forest Management by Kenneth P. Davis (McGraw-Hill Book Co., 482 pp., \$7.50) is the newest addition to the American Forestry Series. Its author is professor of forest management, School of Natural Resources, University of

Michigan. The book is intended for use both as a reference and as a text. It should serve both purposes well.

Professor Davis acknowledges the multiple purpose use under which forests should be managed, but points out that he feels the subject of growing timber at a profit is a sufficiently large one for one book. He approaches forest management as a business concept that is founded on forestry technology. It is, he says, the art of integration, of the application under varied field conditions of underlying principles and techniques.

The book is divided into two parts. The first, of 13 chapters, deals with the "Foundations of Management," while the second, of eight chapters, deals with "Valuation."

An excellent feature is the considerable number of concrete examples of forest management as now being practiced on specific areas of forest land in this country, case histories with a wide variety of situations covered. Professor Davis continually emphasizes that forest management must be practical and flexible, but this does not mean that he has not covered its fundamentals nor that he is trying to persuade the reader that it is simple, uncomplicated. Quite to the contrary. He recognizes that, in company with most fields of learning, simplicity is reached only through the comprehension of complexities.

This book is a very fine contribution to the professional forest manager and it will doubtless be well received and widely used.

Briefly Noted

During a period approximating a year many worthwhile books accumulated at the editorial office of AMERICAN FORESTS without being reviewed for its readers. This presents a problem. With the considerable volume of new books that keep coming up, it does not seem quite fair to the readers, who may have had opportunity to read elsewhere of books published some months ago, to take up much time with those that have been on the market for six months or a year. However, many of these are very worthwhile and it seems advisable to call them to the readers' attention in case they missed them. A compromise is offered by briefly listing such books.

Having conceived of such a classification, it seems to be reasonable to add to it those books that, though judged valuable, are of special in-

terest to a limited group of readers. Under this heading, then, the year of publication will be indicated.

Forest Products Research Guide (by the Standing Committee on Products and Research of the National Lumber Manufacturers Association. 5th edition. 386 pp. \$10. 1952) is a catalogue of what has been done or is under way in forest products research by private and public agencies in the U. S. and abroad. It identifies more than 17,000 projects being conducted by some 3000 organizations.

Conservation Law and Administration by William F. Schulz Jr. (Ronald Press, 607 pp. \$10. 1953) was sponsored by the Conservation Foundation and is the first comprehensive study of a state's conservation laws and the administration of its renewable natural resources. Pennsylvania, an old timer in that field, is the subject. Pertinent federal statutes are mentioned. A Model Conservation Administration Act is presented as a guide to interested groups that are considering legislative action in that field.

Vegetation and Watershed Management by E. A. Colman (Ronald Press. 412 pp. \$7. 1953) is another Conservation Foundation study, discussing the relationship of vegetation to water supply and the management of vegetation to augment this supply, and to reduce erosion, flood peaks, and siltation of reservoirs.

Birds and Mammals of the Sierra Nevada by Lowell Sumner and Joseph S. Dixon (University of California Press. 484 pp. \$7.50 1953) is prepared for the person who would learn of the identity, nature, and habitat of some 65 mammals and 167 birds inhabiting that western region of our country.



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Portland, Oregon — Headquarters, Multnomah Hotel

SEPTEMBER 6 TO 9, 1954

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In making hotel reservations, please use the blank below. Indicate first, second and third choice of hotels.

A \$5.00 deposit is required for each room reserved. Make checks payable to The American Forestry Association 1954 Convention Fund.

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New Heathman	\$ 8.50	Double \$8.00 Single 6.50	\$16.00
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Interest Mounts In AFA's Caravan

DEAR PRESIDENT JOHNSTON:

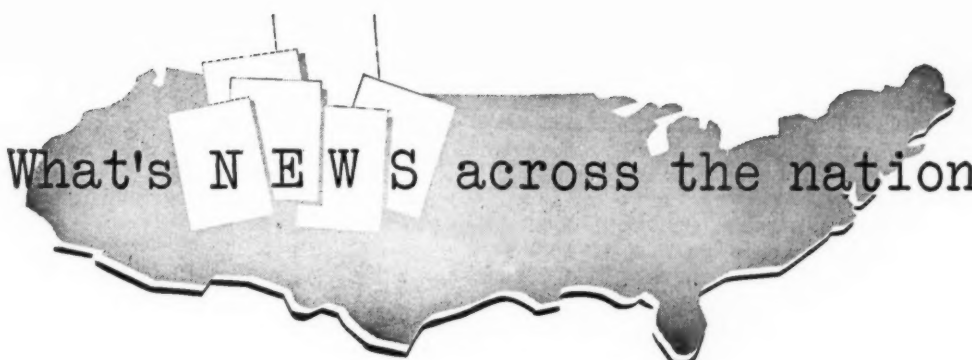
Is there somebody from New England, age nine, that is going to Oregon in September of this year? My father is running for the State Legislature and cannot come. Perhaps I could go with somebody else from New England. I am anxious to go to Oregon because I have read a lot about it. I'll wait to hear from you.

ROBERT L. DENORMANDIE
Trapelo Road
Lincoln, Mass.

Master DeNormandie's letter was one of 250 received last month by the AFA from members of the Association who are "anxious to go to Oregon" to attend the first Northwest annual meeting of the AFA in Portland September 6-9. Most of them are interested in making the trip on AFA's "Conservation Caravan" that leaves Chicago August 30 with scheduled stops at Glacier National Park, the Neils Lumber Company in Montana, Portland, San Francisco, Yosemite National Park and Grand Canyon.

For example, Member E. A. Pontzer, of St. Marys, Pennsylvania, is anxious to bring along his collection of 150 different species of United States woods. A number of others have inquired if a projector and screen will be available on the train to show pictures of forestry endeavor in various parts of the country. With officials of many forestry agencies showing interest in boarding the train at various points to describe the work in their localities, there is every indication that the tour will prove to be a liberal education in federal, state and private forestry work.

Meanwhile, the active Ohio Forestry Association last month received approval from its Board of Directors to sponsor its own train or special Ohio section to the Portland convention. Whether the Ohioans will run their own train to the convention or include special Ohio cars on the big AFA Caravan has not as yet been fully determined but in any event, as Executive Director William Laybourne phrased it last month, "Ohio will be there."



What's NEWS across the nation

CREATION OF A COMMITTEE OF THREE MEMBERS TO SEEK A NATIONAL WATER POLICY was announced on May 25 by President Eisenhower at the 41st convention of the National Rivers and Harbors Congress in Washington. The committee will consist of the Secretaries of Agriculture, Defense and Interior. Unless we act now on our water problems, we may eventually find ourselves living in a have-not nation, the President indicated. The only way to get a proper program, he said, was to start at the Continental Divide "to see what becomes of the water, all the water to the sea" and coordinate water development with other natural activities, including soil conservation. The new Cabinet committee will cooperate with such conservation bodies as the Rivers and Harbors Congress and with the Hoover Commission, the President said. Speaking on the same program, D. A. Williams, Administrator, Soil Conservation Service, said that the new emphasis the administration has given to upstream watershed management extends the basic concept of the 2,585 Soil Conservation Districts with preeminence given to local initiative and responsibility and featuring teamwork between local, state and federal agencies. Upstream programs developed by local groups with assistance from the Department of Agriculture are multiple-purpose in nature aimed at soil conservation and flood protection, Mr. Williams said.

BLACK BLIZZARDS—THE DUST FROM A NEW DUST BOWL, are worse than in the bleak '30s, governors of five western states informed the White House last month. Conditions in today's double dust bowls—located in Nebraska, Colorado, Kansas, New Mexico, Oklahoma and Texas—are now carrying off valuable topsoil, ruining crops and starving livestock. So far, farmers are riding out the storm but the governors want to halt the destruction before the farms' savings are eaten away. Meanwhile, the Agriculture Department, which is advising the President, recommends the following measures: To save blowing land, plow deep furrows across the fields, turning up heavy clods that will hold down the loose topsoil. If the wind and drought last, get some kind of growing cover on the land—any kind of vegetation—grass, sorghums, even weeds; keep the cover on the land by grazing it lightly, if at all and by plowing only if moisture comes, and then without disturbing the top stubble; to avoid future dust bowls, the Department makes three recommendations. They are: Conserve water by contour plowing, preserving the stubble cover and building tree "shelter belts"; turn poor land back to grass and keep it in grass; cut down on grazing of poor land.

GROUND WATER RESERVOIRS NOW YIELD ABOUT ONE-SIXTH of the nation's water withdrawals, according to the House Interior and Insular Affairs Committee. Although some have been and are being overdrawn, in the aggregate they could yield much more. Why, then, do wells run dry, asks Karl Hess in the Washington Daily News. The catch, he says, is a simple lack of knowledge. We simply do not know enough about our ground water supply although its total capacity is believed to be several times that of the Great Lakes and possibly equal to about 35 years' supply of the rainwater that runs off to feed our surface water bodies. Actually, the ground water supply of the nation is not shrinking, Mr. Hess states. Its dissipation has come only on a local basis and the main cause is overpumping. Ground water is now taken from the wells (private, industrial and municipal) of America at a rate of more than three billion gallons a day, Mr. Hess revealed.

(Turn to next page)

HOW MUCH SNOW IS THERE IN THE MOUNTAINS THIS YEAR? About this time of year people begin to ask this question. Forest rangers in the U.S. Forest Service engaged in snow survey work endeavor to supply the answers for farmers who want to be prepared for irrigation, power company officials looking to the amount of water that may be developed from the snow pack, and others interested in the possibilities of floods. An indication of the amount of snow and water contained in snow found in some snow courses on April 1 of this year, compared with the water content at these courses for a period of 15 to 17 years, is as follows: Hoodoo Summit on the Lolo National Forest had 172.6 inches of snow containing 69 inches of water. The average content for 17 years is 46.6 inches. Lookout Pass on the Coeur d'Alene National Forest had 136 inches of snow with 50 inches of water. The 17-year average water content is 33.4 inches. Desert Mountain on the Flat-head National Forest had 51.4 inches of snow containing 18.3 inches of water. The average water content for 15 years is 15.3 inches. Moisture resulting from snow represents generally about one-half of the annual precipitation and is becoming more definitely appreciated as a valuable resource in the economy of the northwest.

MONTREAL WILL BE THE SITE OF THE 20th NORTH AMERICAN WILDLIFE CONFERENCE March 14-16, 1955, the Wildlife Management Institute reports. Last time one of these large meetings was held in Canada was in 1942 when the 7th North American Wildlife Conference met at Toronto. Dr. Gustav A. Swanson, president, has appointed C. Gordon Fredine, wildlife research biologist of the Fish and Wildlife Service, to represent the society as chairman of the technical sessions program committee.

TREES FOR TOMORROW, INC., OF WISCONSIN, CELEBRATED ITS 10th ANNIVERSARY in April and re-elected Folke Becker, president. Highlighting a decade of activity, Mr. Becker told representatives of the 12 paper mills and five power companies who sponsor the organization, that no other organization in the country works more closely with landowners, public agencies, school administrators, teachers and the pupils themselves than Trees for Tomorrow. M. N. Taylor, executive director, said that his organization has distributed six million free trees to 4988 landowners, machine-planted another three million for 162 people, and prepared forest management plans for 122,000 acres of woodlands owned by 339 people. More than 16,000 people have studied resource management at the Trees for Tomorrow camp.

NEWS ABOUT PEOPLE: George L. Drake, 65, vice president and chief forester of the Simpson Logging Company, Shelton, Washington, retired in May. He is a former president of the Society of American Foresters, the Pacific Logging Congress, and the Western Forestry and Conservation Association. Born in New Hampshire, Mr. Drake received his forestry degree at Penn State. He joined the Simpson staff in 1930 following a tour of duty with the Forest Service. Appointment of Richard Kilbourne as director of the Division of Forestry Relations of the Tennessee Valley Authority was announced in April. He succeeds Willis M. Baker, director for the last 16 years, who named Assistant Director Kilbourne to succeed him. A graduate of Penn State, Mr. Baker has been in public service for 40 years, 16 of them as the very active head of TVA's soundly-conceived forestry program in the Tennessee Valley area. A former Marine, Mr. Kilbourne, has a master's degree in forestry from Yale. His career included both the private and public forestry fields. He is presently vice-mayor of Norris, Tennessee. St. Regis Paper Company has announced the award of its Fellowship in Forestry to Philip H. Larson, currently engaged in silvicultural research at the Southeast Forest Experiment Station in Lake City, Florida. A native of St. Paul, Minnesota, Mr. Larson is a graduate of the University of Minnesota and now plans to enter the Yale University Graduate School to study for his Ph.D. degree under the direction of the School of Forestry. His doctoral thesis will be directed primarily toward the pulp and paper industry and will deal with the effect of certain climatic and environmental factors on the wood density and proportion of summerwood in slash pine. As announced by A. B. Recknagel, the firm's Fellowship in Forestry is valued at \$1000 and covers one year of work. Col. W. B. Greeley, former chief of the Forest Service and vice president of the West Coast Lumbermen's Association, last month was presented with an official tree farm certificate by Washington Governor Arthur B. Langlie. Col. Greeley's 40-acre tree farm is located at his home on the shore of Port Gamble Bay, in Washington.

AMONG OUR AUTHORS



Mr. Chapman

H. H. Chapman (*Our National Forests and What They Mean to Us*) is professor emeritus of the outstanding senior members of the forestry profession, he is a recognized authority on forest taxation and valuation. Prof. Chapman played a major part in the establishment

of the first national forest in the U. S., in Minnesota. A former director of The American Forestry Association, he has been a frequent contributor to *AMERICAN FORESTS* and is the author of a number of books, among which *Forest Finance*, *Forest Mensuration* and *Forest Valuation* are widely known.

Albert Arnst (*Twin Crops in the Pines*) is a former editor of *The Timberman* and currently is managing editor of *The Lumberman*. A forestry graduate of Oregon State College, he has done public relations work in the Pacific Northwest and has been a regular contributor to *AMERICAN FORESTS* and other leading conservation periodicals.

James Stevens (*A Forester is First a Man*) is one of the nation's outstanding conservation writers. In charge of the Seattle public relations office of the West Coast Lumbermen's Association, he has written articles and features for most of our better known publications. He also is the author of a number of books.



Mr. Peet

Creighton Peet (*Famous Forests*) is a New York newspaper and magazine writer who has written literally hundreds of articles, columns and reviews for many of the leading publications of the country. A graduate of the Columbia School of Journalism, he has worked for newspapers in New York, Philadelphia and Los Angeles. In addition, he has written many factual books for children.



Mr. Long

E. John Long (*The Return of the Handyman*) is a native of Pennsylvania, studied at the U. S. Naval Academy and Columbia University and has worked as a newsboy, reporter, columnist and editor. He was on the staff of the *National Geographic* for more than ten years. He was a member of the William Beebe Deep Sea and the MacMillan-Byrd Arctic Expeditions. During the war Mr. Long saw duty in both the Pacific and Atlantic theaters and in 1947-48 served as naval aide to Secretary of Defense James Forrestal.

Letters

(From page 3)

CAN FORESTS, for I am a lover of these Big Trees. However, I should like to point out one statement that is somewhat misleading, namely (page 49) that "... today nearly all of these trees are in either the Sequoia, the Kings Canyon, or the Yosemite National Parks ..." I know that this is not the case, for I have seen and worked among hundreds of Big Trees in Sequoia National Forest, and have also visited the groves in the Tahoe, Stanislaus, and Sierra National Forests.

In regard to the relative acreage of Big Trees on various types of public and on private land, I have taken the following figures from a 1952 report prepared by the State Park Commission and the State For-

ester for the California Legislature entitled "The Status of Sequoia Gigantea in the Sierra Nevada":

If you have not seen this report, it might be worth your investigation. Not only does it give much valuable background information regarding Sequoia gigantea, but it reports on the feasibility and desirability of public acquisition of the remaining 12 percent of Big Tree acreage now in private ownership. The investigation which led to this report was the result of a California Senate concurrent resolution, brought about by the logging of Big Trees in privately-owned groves since World War II.

Richard H. May
Berkeley, California

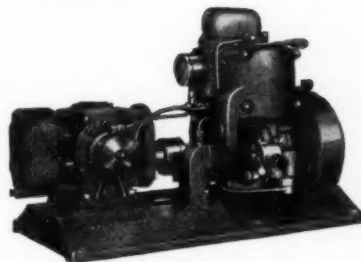
Kind of Ownership	All Stands		Virgin Stands	
	Acres	Percent	Acres	Percent
Public				
Federal				
National Parks	14,570	41	13,260	57
National Forests	13,315	38	6,445	27
State of California	2,512	7	1,692	7
Other public (county, etc.)	840	2	260	1
Total Public	31,237	88	21,657	92
Private	4,370	12	1,870	8
GRAND TOTAL	35,607	100	23,527	100

(Most cutover Big Tree lands in public ownership were acquired after logging.)

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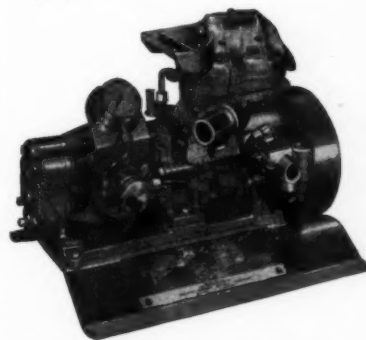
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Feature Photo of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected AMERICAN FORESTS will pay \$10.



Photo submitted by Mrs. Richard Rodriguez

The so-called sausage tree is one of the oddities of Hawaii's large flora tribe, most of it non-native. The tree actually is of a species native to Africa. The "sausages" are not edible



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Several expeditions are already filled, but additional reservations are available on most of the trips. On filled trips you may be able to pick up a cancellation. We will do our best to include you on the expedition of your choice.

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July 5 to July 16; July 16 to July 27
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QUETICO—SUPERIOR WILDERNESS, MINNESOTA Canoe Trip

July 10 to July 19
\$195 from Ely, Minnesota. Party limited to 15

SHOSHONE—YELLOWSTONE TRAIL, WYOMING

July 20 to July 30
\$215 from Cody, Wyoming. Party limited to 25

MAROON BELLS—SNOWMASS WILDERNESS, COLORADO

July 21 to July 31 and August 3 to August 13
\$215 from Glenwood Springs, Colorado
Parties limited to 30

WONDERLAND TRAIL, MT. RAINIER NATIONAL PARK, WASHINGTON

August 15 to August 25
Cost \$210. Party limited to 25

HIGH UINTAS WILDERNESS, UTAH

July 26 to August 5
\$215 from Vernal, Utah. Party limited to 26

SAWTOOTH WILDERNESS, IDAHO

July 27 to August 6 and August 10 to August 20
\$205 from Sun Valley, Idaho. Parties limited to 25

SAN JUAN WILDERNESS, COLORADO

August 13 to August 23 and August 28 to September 7
\$215 from Durango, Colorado. Parties limited to 25

GLACIER PEAK—LAKE CHELAN, WASHINGTON

August 26 to September 6
\$215 from Wenatchee, Washington. Party limited to 25

SEQUOIA—MT. WHITNEY WILDERNESS, CALIFORNIA

August 25 to September 3
\$210 from Lone Pine, California. Party limited to 20

PECOS WILDERNESS, NEW MEXICO

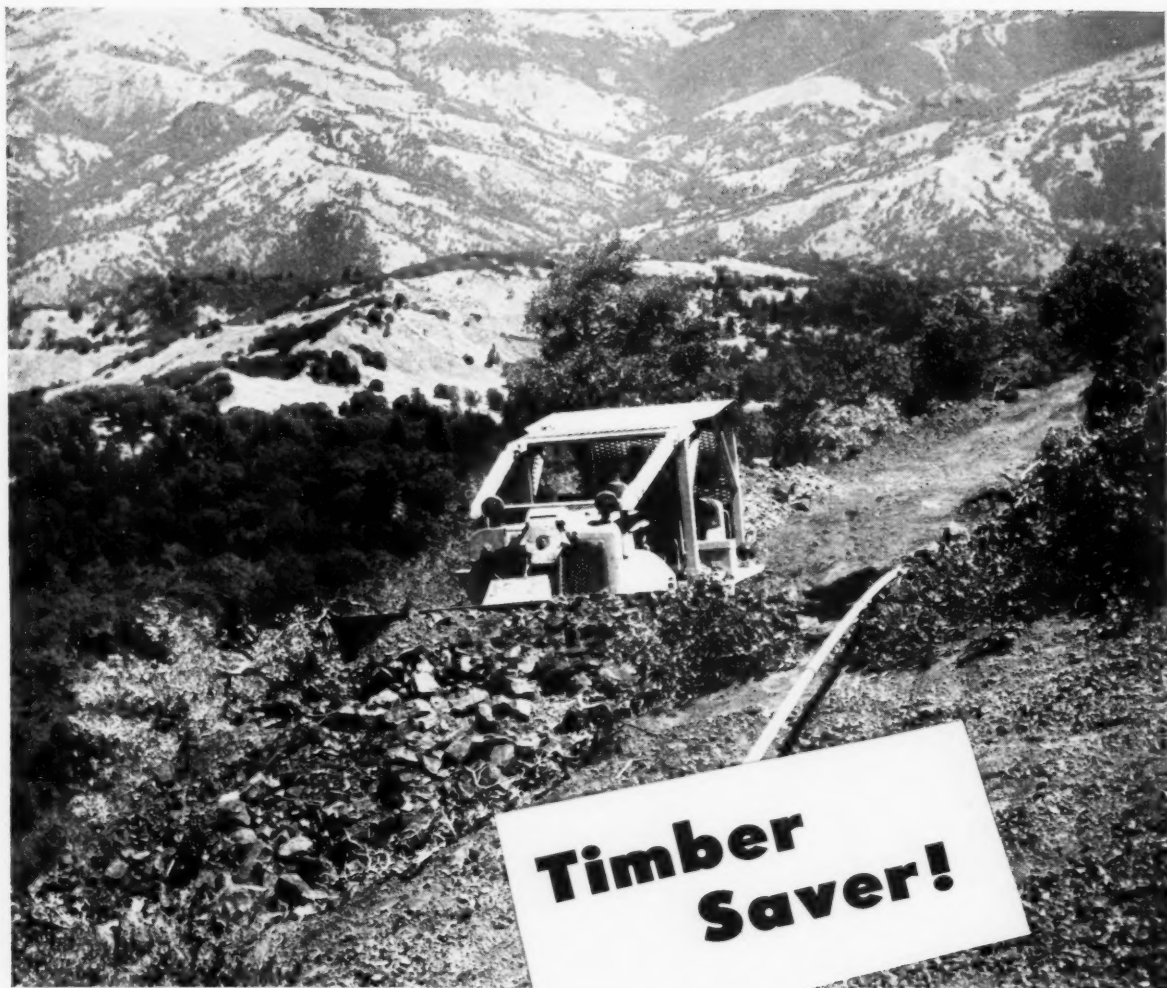
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THE AMERICAN FORESTRY ASSOCIATION

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This is one of the Cat* D7 Tractors with No. 7A Bulldozers owned by the California State Division of Forestry. Forest Ranger Charles P. Campbell says: "We feel these 'dozers have saved many acres of valuable timber. One takes the place of 100 men fire fighting. The service we get from our Caterpillar Dealer is superior."

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You'll get a *lot* of work with *little* down time at *low* cost from this slugger. For maximum performance, blade

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